Refrigerant R410A

INVERTER

AIR CONDITIONER

3 phase type

Single / Simultaneous multi system

DESIGN & TECHNICAL MANUAL

SINGLE INDOOR

AU∗G36LRLA
AU∗G45LRLA
AU∗G54LRLA

AR∗G36LMLA
AR∗G45LMLA

AR∗G45LHTA
AR∗G54LHTA

AB∗G36LRTA
AB∗G45LRTA
AB∗G54LRTA

SIMULTANEOUS MULTI INDOOR

AU∗G18LVLB × 2
AU∗G22LVLA × 2
AU∗G24LVLA × 2
AU∗G18LVLB × 3

AR∗G18LLTB × 2
AR∗G18LLTB × 3

AR∗G22LMLA × 2
AR∗G24LMLA × 2

AB∗G18LVTB × 2
AB∗G22LVTA × 2
AB∗G24LVTA × 2
AB∗G18LVTB × 3

OUTDOOR

AO∗G36LATT
AO∗G45LATT
AO∗G54LATT

FUJITSU GENERAL LIMITED

DTR_SSM001E_03
2013.02.22

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Refrigerant R410A
INVERTER

AIR CONDITIONER

3 phase type

Single / Simultaneous multi system

1. GENERAL INFORMATION

DTR_SSM001E_03--CHAPTER01
2013.02.22

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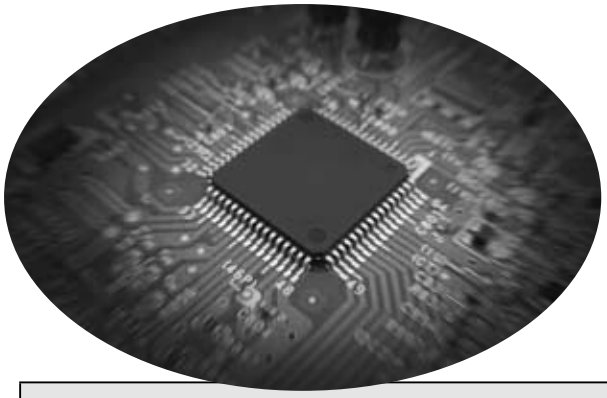
GENERAL INFORMATION

1. FEATURES OF SYSTEM

1-1. PERFORMANCE AND ENERGY SAVING

■ HIGH PERFORMANCE AND TOP CLASS ENERGY SAVING (SINGLE SYSTEM)

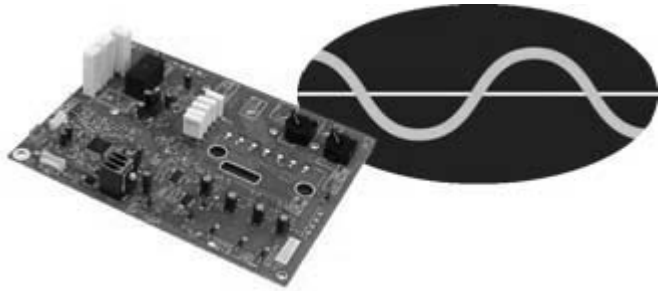


Both high performance and top class energy saving achieved by adoption of DC inverter.

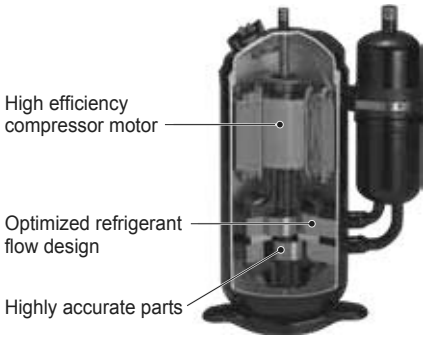
Operating cost suppressed while maintaining comfort.

■ SINE WAVE DC INVERTER CONTROL

High efficiency operation is realized by using a sine wave DC inverter control.

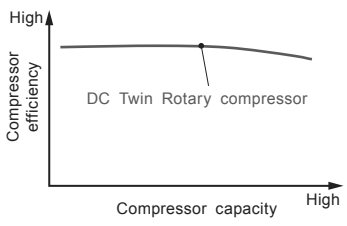


■ DC TWIN ROTARY COMPRESSOR



DC twin rotary compressor

Efficiency in all load regions is good.
Especially good performance from low to medium at normal operation.



■ DC FAN MOTOR

Miniaturized, low noise, high efficiency, multi-stage DC fan motor is mounted.

GENERAL INFORMATION

■ PEAK CUT FUNCTION (OPTIONAL PARTS: UTY-XWZXZ2)

Suppresses maximum capacity and performs energy-saving operation and can prevent breaker tripping.

This function performs operation by setting a peak current value and reducing the power consumption.

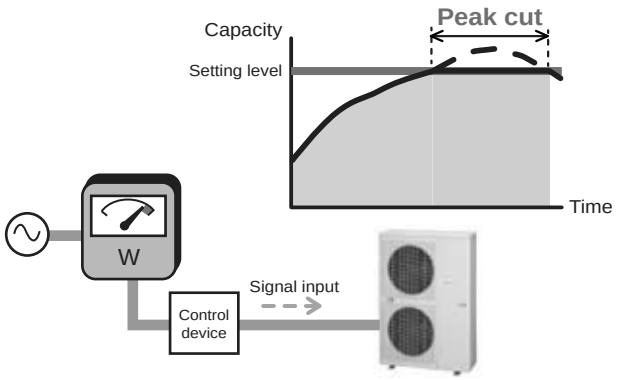
* Performance drops by reducing the power consumption preferentially.

Level 1 ... Performs operation which suppresses the power consumption to almost 0% by stopping the compressor.

Level 2 ... Performs operation which suppresses the power consumption to 50% of the rated power consumption value.

Level 3 ... Performs operation which suppresses the power consumption to 75% of the rated power consumption value.

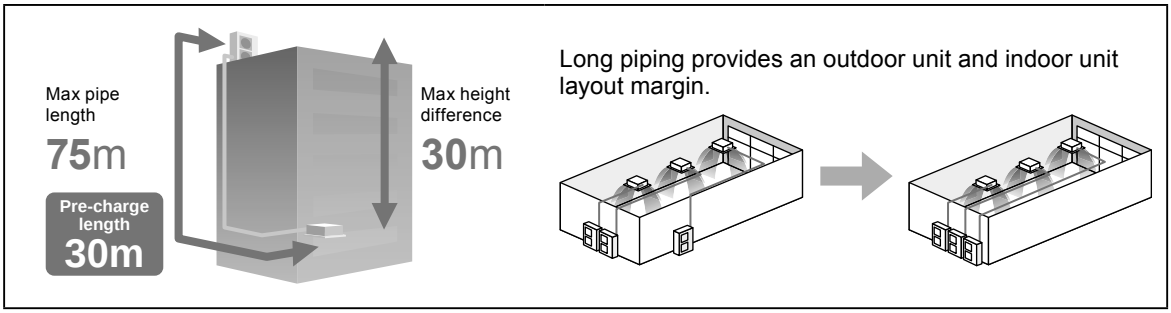
Level 4 ... Performs operation which suppresses the power consumption to the rated power consumption value (100%).



GENERAL INFORMATION

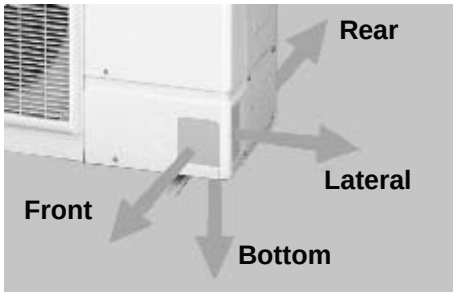
1-2. EASY INSTALLATION

■ HIGH INSTALL ABILITY LONG PIPING CORRESPONDENCE (SINGLE SYSTEM)



■ 4-DIRECTIONS PIPING CONNECTION

Four directions piping connection is possible. The perfect route can be selected according to the installation.



■ LOW OUTDOOR AIR TEMPERATURE CORRESPONDENCE

Both cooling and heating operations can be performed when the outdoor air temperature is low.

Cooling		-15 ºC
Heating	Dry-bulb	-15 ºC
	Wet-bulb	-20 ºC

■ EXTERNAL OUTPUT (OPTION)

● Compressor status output

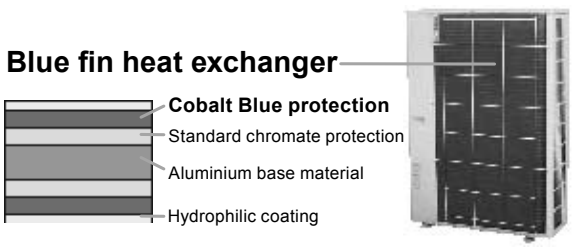
This output indicates the outdoor unit operation status's On / Off.

● Error status output

This output indicates the outdoor unit and connected indoor unit's Normal / Error.

■ BLUE FIN HEAT EXCHANGER

Corrosion-resistance of the heat exchanger even in coastal areas has been improved by blue fin treatment of the outdoor unit heat exchanger.



■ SERVICE, MAINTENANCE

- "Error display" and "Operating information" can be explained by LED display.
- Pump down operation can be performed by one button when refrigerant recovery.

GENERAL INFORMATION

1-3. QUIET OPERATION

■ LOW NOISE FUNCTION (OPTIONAL PARTS: UTY-XWZXZ2)

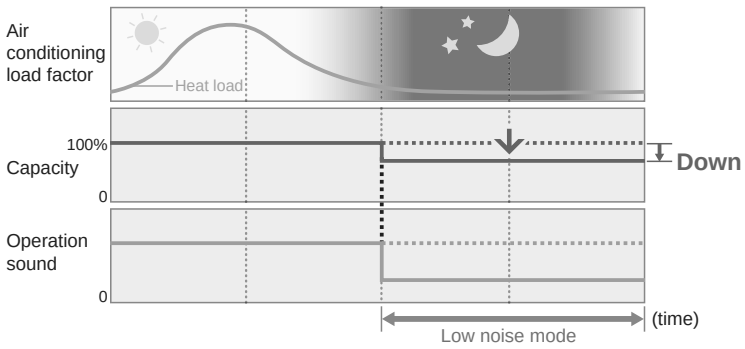
Suppresses operating sound.

This function suppresses the outdoor unit noise value to the following 2 level.

* Performance may drop depending on the outside air temperature condition, etc.

Level 1 ... Rated noise value -2dB

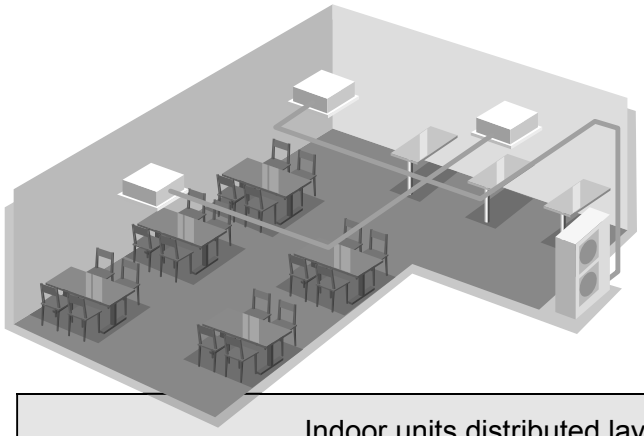
Level 2 ... Rated noise value -4dB



GENERAL INFORMATION

1-4. SIMULTANEOUS MULTI SYSTEM

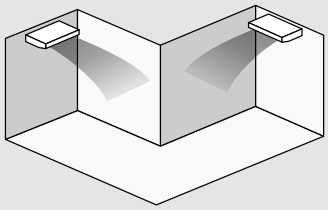
■ IDEAL COMFORTABLE AIR FLOW DISTRIBUTION



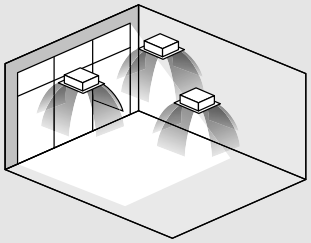
Can support various installation scenes from office to commercial space by same place multi connection of up to 3 units.

Indoor units distributed layout according to the shape and number of people and lighting conditions of the room even on wide floors and atypical floors. Ideal comfortable air flow distribution can be realized.

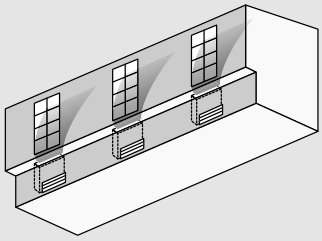
Installation according to floor layout



Installation according to lighting conditions



Installation according to layout and lighting conditions



■ ALL DC

● ALL DC saves energy throughout the year

By making all the motors DC, electricity loss is decreased and power consumption is substantially reduced. In addition, fan motor high speed rotation is increased and annual power consumption amount is saved by increasing the airflow.

ALL DC

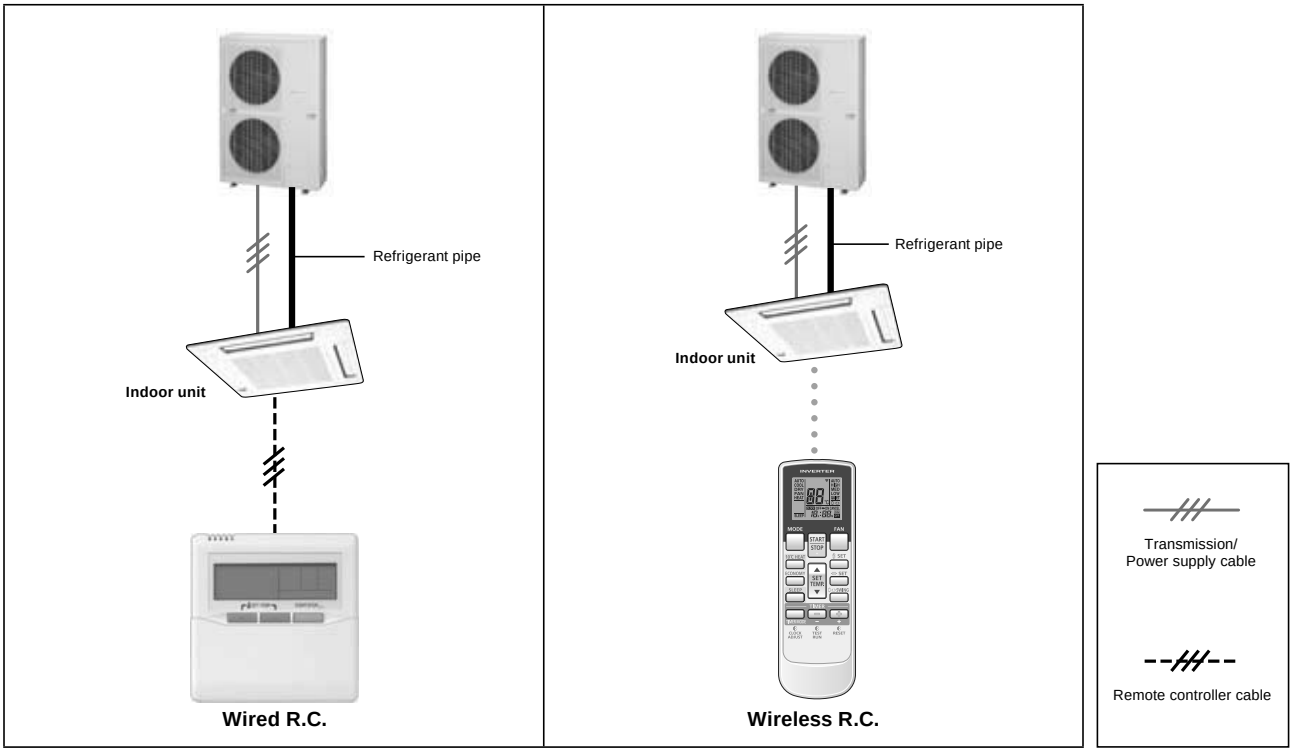
GENERAL INFORMATION

1-5. CONTROL SYSTEM

■ 1-REMOTE CONTROLLER CONTROL

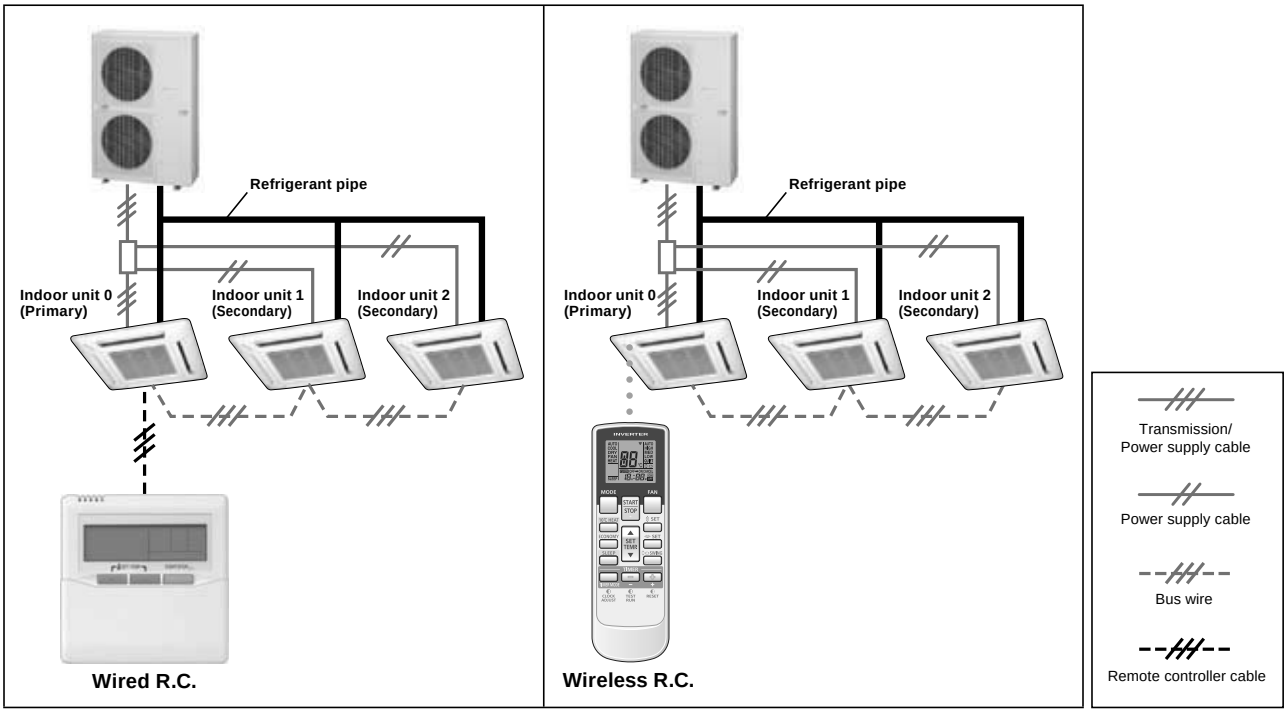
This is the most basic system. Wired type or wireless type remote controller can be selected.

● Single system



* When using a wireless type remote controller, install IR Receiver unit to the indoor units.
  (Cassette type, Duct type)

● Simultaneous multi system



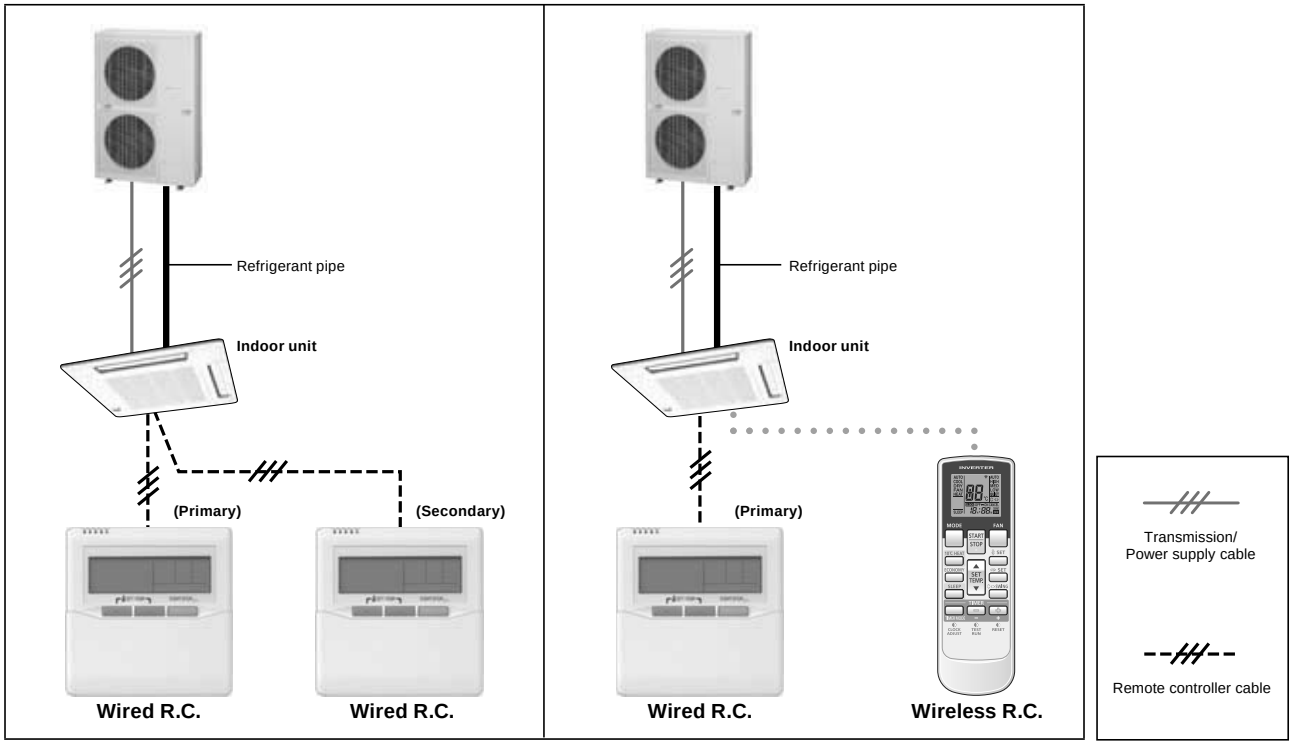
* When using a wireless type remote controller, install IR Receiver unit to the indoor units.
  (Slim duct type, Duct type)
* In simultaneous multi connection, the timer and 10°C HEAT functions by using the wireless remote controller cannot be used.

GENERAL INFORMATION

■2-REMOTE CONTROLLERS CONTROL

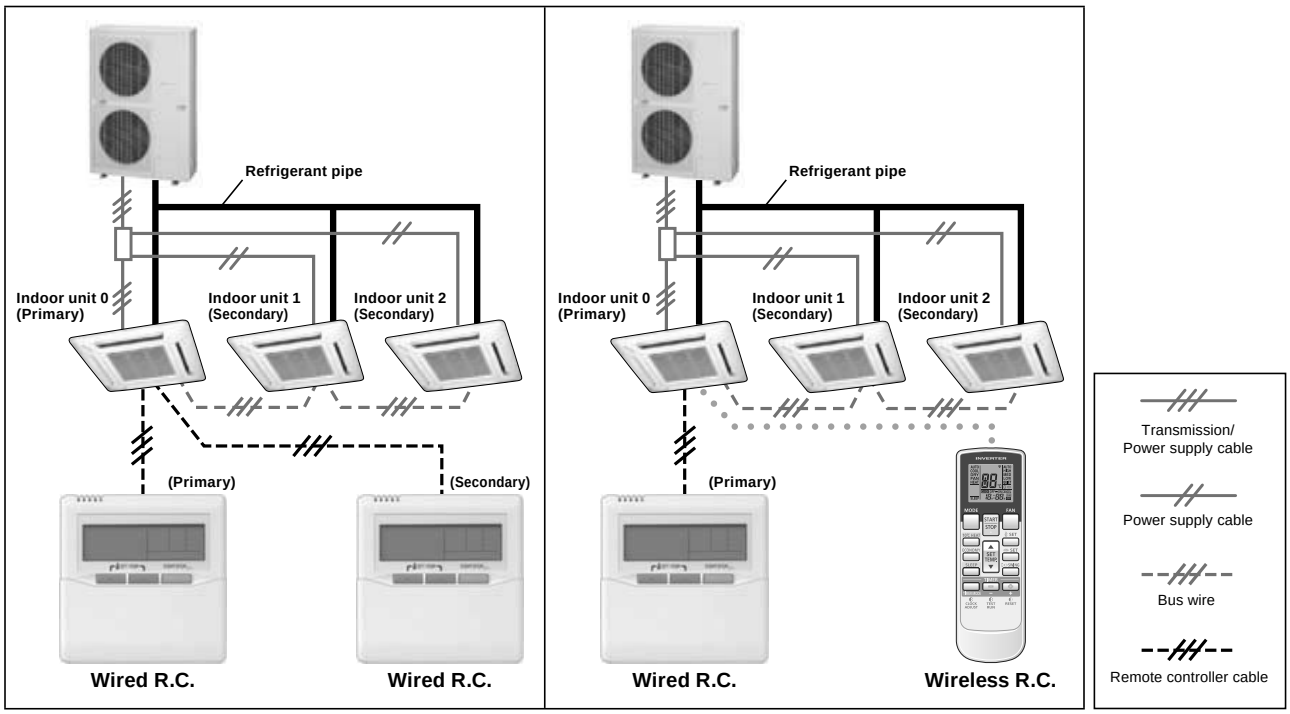
Control locally and from a remote point is possible using 2-remote controllers.

●Single system



* For 2 wired-type remote controllers, specify a primary and a secondary remote controller.
* The timer and 10°C HEAT (Wireless R.C. only) functions of the remote controller specified as the secondary cannot be used.
* When using a wireless type remote controller, install IR Receiver unit to the indoor units.
  (Cassette type, Duct type)

●Simultaneous multi system

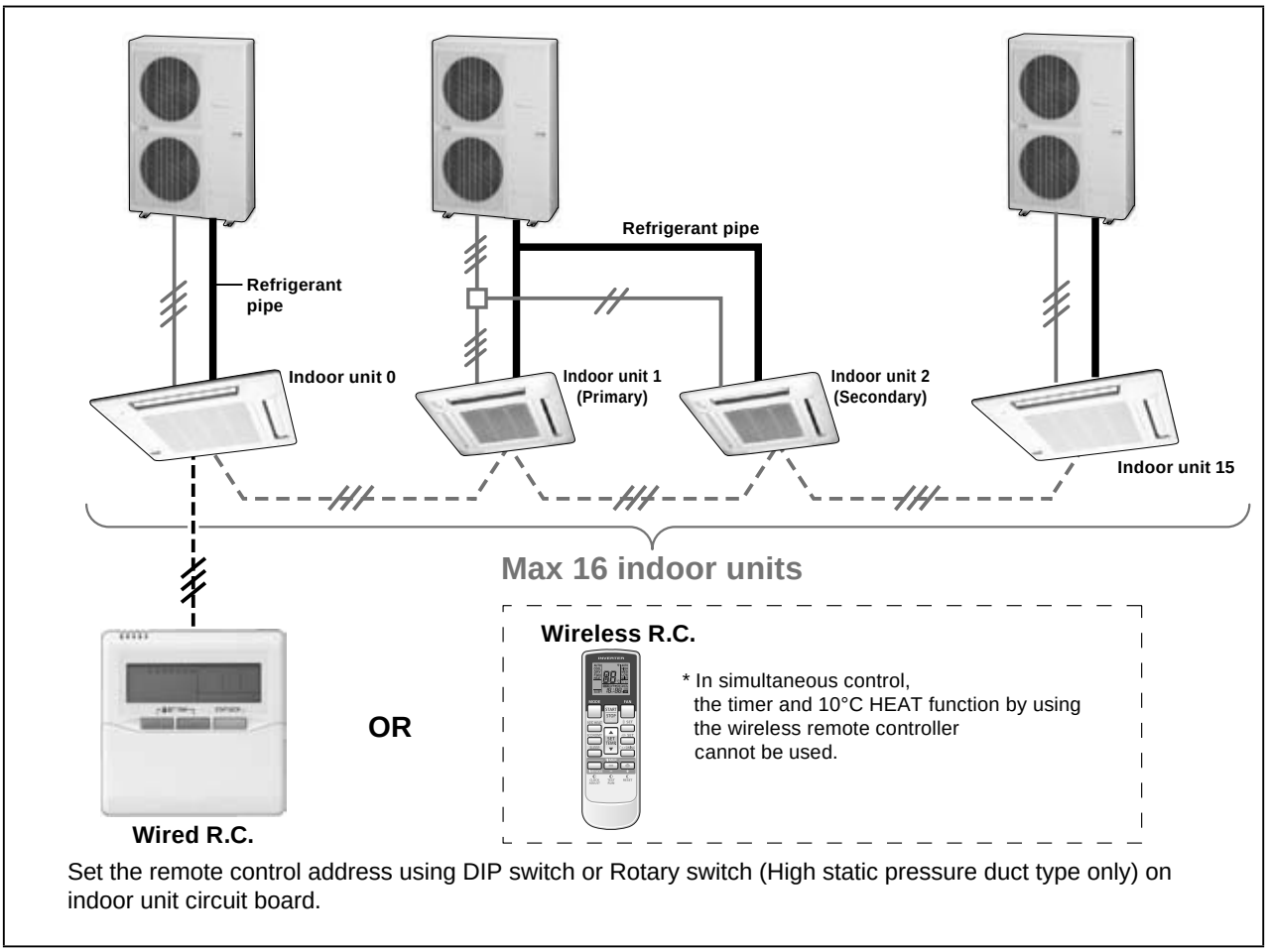


* For 2 wired-type remote controllers, specify a primary and a secondary remote controller.
* The timer and 10°C HEAT (Wireless R.C. only) functions of the remote controller specified as the secondary cannot be used.
* In simultaneous multi connection, the timer and 10°C HEAT functions by using the wireless remote controller cannot be used.
* When using a wireless type remote controller, install IR Receiver unit to the indoor units.
  (Slim duct type, Duct type)

GENERAL INFORMATION

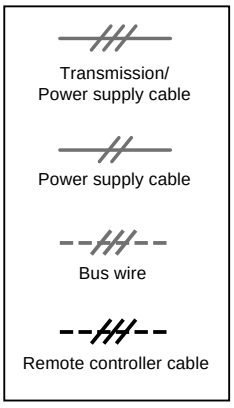
■ GROUP CONTROL

Max 16 indoor units are simultaneously controlled with a wired remote controller.


Refrigerant pipe
Refrigerant pipe
Indoor unit 0
Indoor unit 1 (Primary)
Indoor unit 2 (Secondary)
Indoor unit 15
Max 16 indoor units
Wireless R.C.
* In simultaneous control, the timer and 10°C HEAT function by using the wireless remote controller cannot be used.
OR
Wired R.C.

Set the remote control address using DIP switch or Rotary switch (High static pressure duct type only) on indoor unit circuit board.

* In the group connection of different models, the functions which can be set by using the wired remote controller are limited.



GENERAL INFORMATION

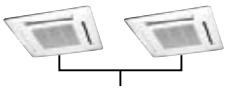
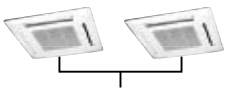
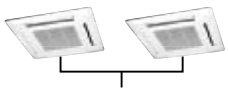
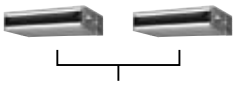
2. MODEL LINE UP

2-1. INDOOR UNITS

■ SINGLE SYSTEM

	36 model	45 model	54 model
CASSETTE	AU∗G36LRLA	AU∗G45LRLA	AU∗G54LRLA
DUCT	AR∗G36LMLA	AR∗G45LMLA	
DUCT (High static pressure)		AR∗G45LHTA	AR∗G54LHTA
CEILING	AB∗G36LRTA	AB∗G45LRTA	AB∗G54LRTA

■ SIMULTANEOUS MULTI SYSTEM

	TWIN			TRIPLE
	18 model x2	22 model x2	24 model x2	18 model x3
COMPACT CASSETTE	AU∗G18LVLB x 2 	AU∗G22LVLA x 2 	AU∗G24LVLA x 2 	AU∗G18LVLB x 3
DUCT (18: Slim duct 22, 24: Duct)	AR∗G18LLTB x 2 	AR∗G22LMLA x 2	AR∗G24LMLA x 2	AR∗G18LLTB x 3
FLOOR / CEILING	AB∗G18LVTB x 2	AB∗G22LVTA x 2	AB∗G24LVTA x 2	AB∗G18LVTB x 2

Note :
The combination other than above cannot be performed.
(For example, different indoor type combination such as AU∗G22LVLA + AR∗G22LMLA cannot be performed.)

GENERAL INFORMATION

2-2. OUTDOOR UNIT

SINGLE SYSTEM				
INDOOR UNIT	36 model	45 model	54 model	
SIMULTANEOUS MULTI SYSTEM				
CONNECTION TYPE	Twin			Triple
INDOOR UNIT	18 model x 2	22 model x 2	24 model x 2	18 model x 3
Outdoor Unit	AO∗G36LATT	AO∗G45LATT	AO∗G54LATT	

GENERAL INFORMATION

2-3. CONTROLLER

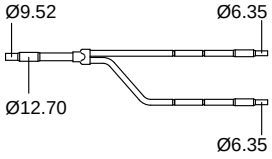
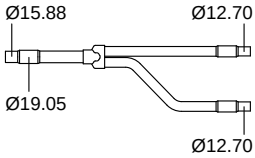
REMOTE CONTROLLER TYPE		Wired Remote Controller			Wireless Remote Controller	IR Receiver Unit		Simple Remote Controller
Note; ●: Accessory O: Optional Parts —: It is not possible to connect it.		 UTY-RVN∗M	 UTY-RNN∗M			 UTY - LRH∗A2	 UTY - LRH∗M	 UTY-RSN∗M
INDOOR UNITS	**SINGLE SYSTEM**							
	CASSETTE	O	●	O	—	O	—	O
	DUCT	O	●	O	—	—	O	O
	HIGH STATIC PRESSURE DUCT	O	●	O	—	—	—	O
	CEILING	O	O		●	—	—	O
	SIMULTANEOUS MULTI SYSTEM							
	COMPACT CASSETTE	O	O		●	—	—	O
	SLIM DUCT	O	●	O	—	—	O	O
	DUCT	O	●	O	—	—	O	O
	FLOOR / CEILING	O	O		●	—	—	O

GENERAL INFORMATION

2-4. BRANCH PIPES

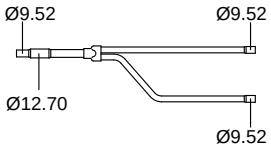
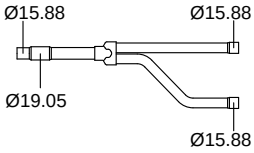
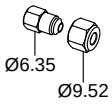
Twin connection type

Model : UTP - SX236□

Liquid pipe	Gas pipe	
		

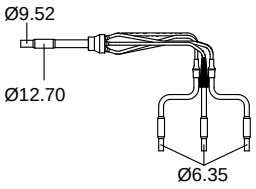
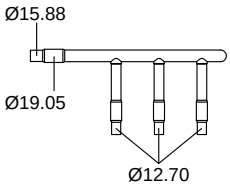
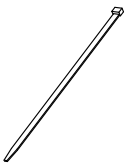
Twin connection type

Model : UTP - SX254□

Liquid pipe	Gas pipe	Adapter
		

Triple connection type

Model : UTP - SX354□

Liquid pipe	Gas pipe	Cable tie
		

GENERAL INFORMATION

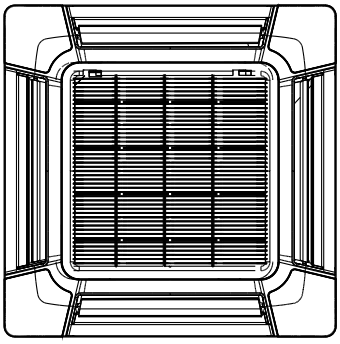
2-5. CASSETTE GRILLE

■ SINGLE SYSTEM

TYPE	MODEL	INDOOR UNITS			
		CASSETTE	DUCT	HIGH STATIC PRESSURE DUCT	CEILING
Cassette grille	UTG-UG∗A-W	O	—	—	—

● Parts

Cassette grille
Model: UTG-UG∗A-W

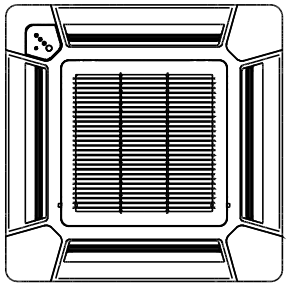


■ SIMULTANEOUS MULTI SYSTEM

TYPE	MODEL	INDOOR UNITS			
		COMPACT CASSETTE	SLIM DUCT	DUCT	FLOOR / CEILING
Cassette grille	UTG-UF∗D-W	O	—	—	—

● Parts

Cassette grille
Model: UTG-UF∗D-W



GENERAL INFORMATION

2-6. OTHERS (optional parts)

■ SINGLE SYSTEM

TYPE	MODEL	INDOOR UNITS				OUTDOOR UNIT
		CASSETTE	DUCT	HIGH STATIC PRESSURE DUCT	CEILING	
Air outlet shutter plate	UTR-YDZC	O	—	—	—	—
Wide panel	UTG-AGYA-W	O	—	—	—	—
Panel spacer	UTG-BGYA-W	O	—	—	—	—
Insulation kit for high humidity	UTZ-KXGA	O	—	—	—	—
Fresh air intake kit	UTZ-VXGA	O	—	—	—	—
Remote sensor unit	UTY-XSZX	—	O	O	—	—
External control set	UTD-ECS5A	O	O	O	O	—
Long-life filter	UTD-LF60KA	—	—	O	—	—
	UTD-LF25NA	—	O	—	—	—
Square flange	UTD-SF045T	—	O	—	—	—
Round flange	UTD-RF204	—	O	—	O	—
Drain pump unit	UTZ-PX1NBA	—	O	—	—	—
	UTR-DPB24T	—	—	—	O	—
External connect kit	UTY-XWZX	O	—	—	O	—
	UTY-XWZXZ2	—	—	—	—	O

O: Optional, —: It is not possible to connect it.

■ SIMULTANEOUS MULTI SYSTEM

TYPE	MODEL	INDOOR UNITS				OUTDOOR UNIT
		COMPACT CASSETTE	SLIM DUCT	DUCT	FLOOR / CEILING	
Air outlet shutter plate	UTR-YDZB	O	—	—	—	—
Insulation kit for high humidity	UTZ-KXGC	O	—	—	—	—
Fresh air intake kit	UTZ-VXAA	O	—	—	—	—
Square flange	UTD-SF045T	—	—	O	—	—
Round flange	UTD-RF204	—	—	O	—	—
Long-life filter	UTD-LF25NA	—	—	O	—	—
Remote sensor unit	UTY-XSZX	—	O	O	—	—
Auto louver grille kit	UTD-GXSB-W	—	O	—	—	—
External control set	UTD-ECS5A	—	O	O	—	—
Drain pump unit	UTZ-PX1NBA	—	—	O	—	—
External connect kit	UTY-XWZX	O	—	—	O	—
	UTY-XWZXZ2	—	—	—	—	O

O: Optional, —: It is not possible to connect it.

GENERAL INFORMATION

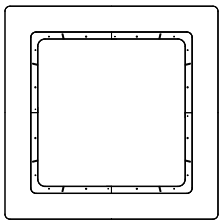
■ SINGLE SYSTEM

● Parts

Air outlet shutter plate
Model:UTR-YDZC

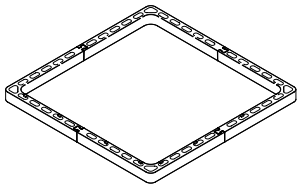
For
CASSETTE TYPE

Wide panel
Model:UTG-AGYA-W



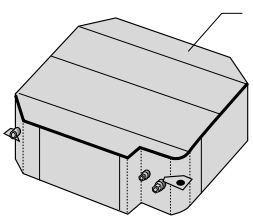
For
CASSETTE TYPE

Panel spacer
Model:UTG-BGYA-W



For
CASSETTE TYPE

Insulation kit for high humidity
Model:UTZ-KXGA



For
CASSETTE TYPE

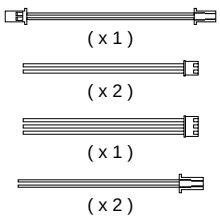
Fresh air intake kit
Model:UTZ-VXGA

For
CASSETTE TYPE

Remote sensor
Model:UTY-XSZX

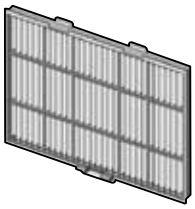
For
HIGH STATIC
PRESSURE DUCT TYPE,
DUCT TYPE

External control set
Model:UTD-ECS5A



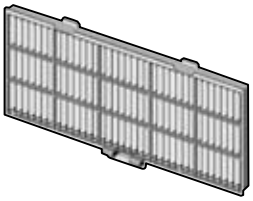
For
CASSETTE TYPE,
HIGH STATIC
PRESSURE DUCT TYPE,
DUCT TYPE,
CEILING TYPE

Long-life filter
Model:UTD-LF60KA



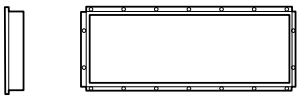
For
HIGH STATIC PRESSURE
DUCT TYPE

Long-life filter
Model:UTD-LF25NA



For
DUCT TYPE

Square flange
Model:UTD-SF045T

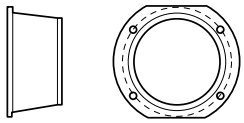


For
DUCT TYPE

GENERAL INFORMATION

Round flange

Model:UTD-RF204



For
DUCT TYPE,
CEILING TYPE

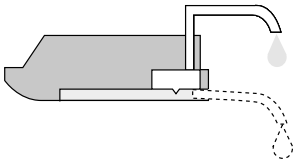
Drain pump unit

Model:UTZ - PX1NBA

For
DUCT TYPE

Drain pump unit

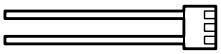
Model:UTR-DPB24T



For
CEILING TYPE

External connect kit

Model:UTY - XWZX



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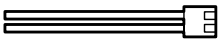

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For
CASSETTE TYPE,
CEILING TYPE

External connect kit

Model:UTY - XWZXZ2

INPUT / OUTPUT

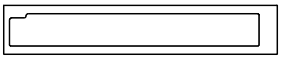
For
OUTDOOR UNIT

GENERAL INFORMATION

■ SIMULTANEOUS MULTI SYSTEM

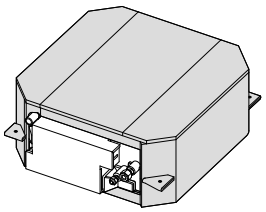
● Parts

Air outlet shutter plate
Model:UTR-YDZB



For
COMPACT CASSETTE
TYPE

Insulation kit for high humidity
Model:UTZ-KXGC

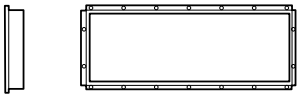


For
COMPACT CASSETTE
TYPE

Fresh air intake kit
Model:UTZ-VXAA

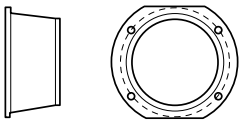
For
COMPACT CASSETTE
TYPE

Square flange
Model:UTD-SF045T



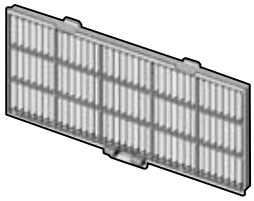
For
DUCT TYPE

Round flange
Model:UTD-RF204



For
DUCT TYPE

Long-life filter
Model:UTD-LF25NA



For
DUCT TYPE

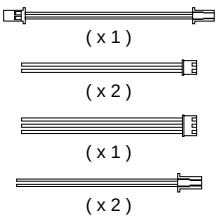
Remote sensor
Model:UTY-XSZX

For
DUCT TYPE,
SLIM DUCT TYPE

Auto louver grille kit
Model:UTD-GXSB-W

For
SLIM DUCT TYPE

External control set
Model:UTD-ECS5A



For
DUCT TYPE,
SLIM DUCT TYPE

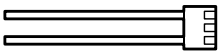
Drain Pump Unit
Model:UTZ - PX1NBA

For
DUCT TYPE

GENERAL INFORMATION

External connect kit

Model:UTY - XWZX



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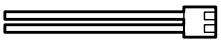

(x 1)

For
COMPACT CASSETTE TYPE,
FLOOR / CEILING TYPE

External connect kit

Model:UTY - XWZXZ2

INPUT / OUTPUT

For
OUTDOOR UNIT

Refrigerant R410A
INVERTER

AIR CONDITIONER

3 phase type

Single / Simultaneous multi system

2. INDOOR UNIT (SINGLE)

DTR_SSM001E_03--CHAPTER02
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1. FEATURES

1-1. CASSETTE TYPE

■ MODEL

AU∗G36LRLA / AO∗G36LATT
AU∗G45LRLA / AO∗G45LATT
AU∗G54LRLA / AO∗G54LATT

■ FEATURES

● Energy efficiency class

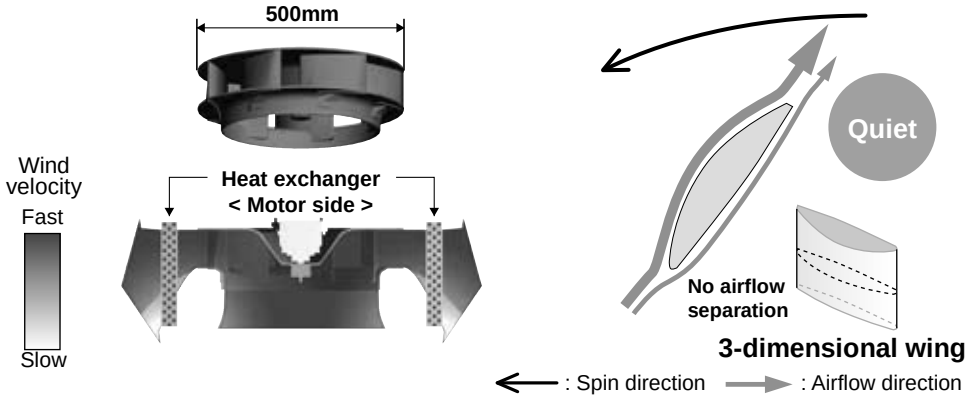
	MODEL
	AU∗G36LRLA
Cooling	A++
Heating	A+

● Advancement in comfort

- Quiet operation was realized by adoption of new type turbo fan
- Improvement of air stream

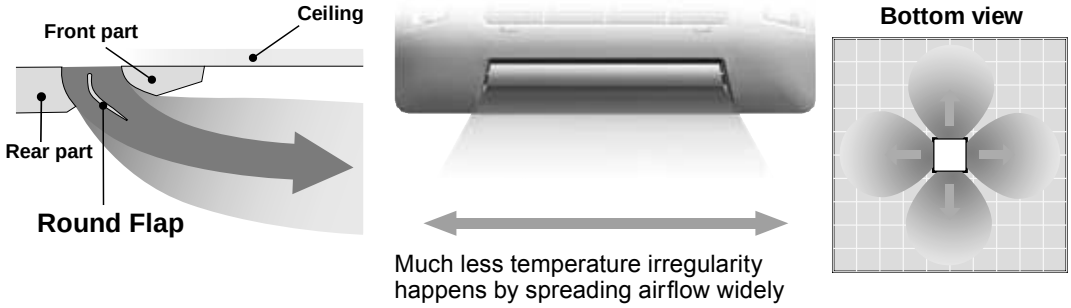
①Adoption of high efficiency turbo fan

High efficiency achieved by equaling the performance of the wing and air passing the heat exchanger



②Improvement of the flap

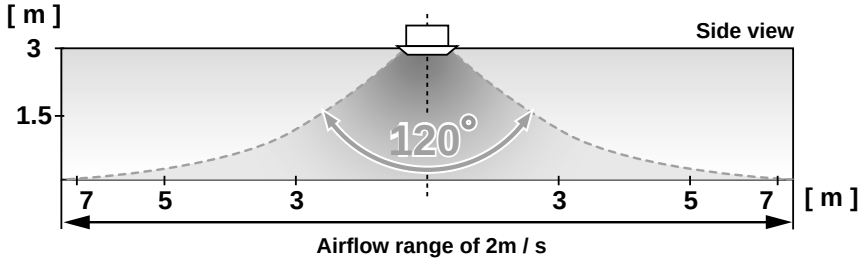
Making space between the ceiling, the air flows far wide and ceiling does not get dirty.



INDOOR UNIT (SINGLE)

③Wide & powerful airflow

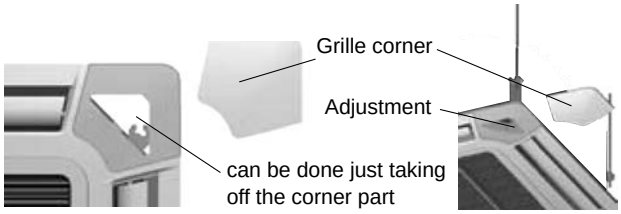
The wind is widely delivered by a high efficiency fan and round flap.



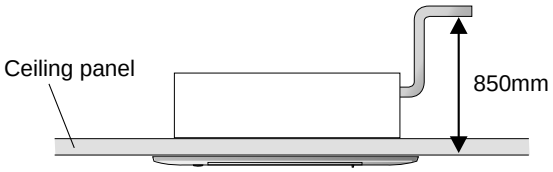
●Improvement of installation & maintenance

• Adjustment of nut is possible after installation

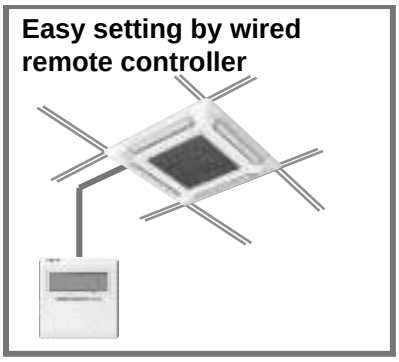
Mounting position of body can be fine adjusted after Decoration panel mounting.



●High lift drain pump



●Easy installation

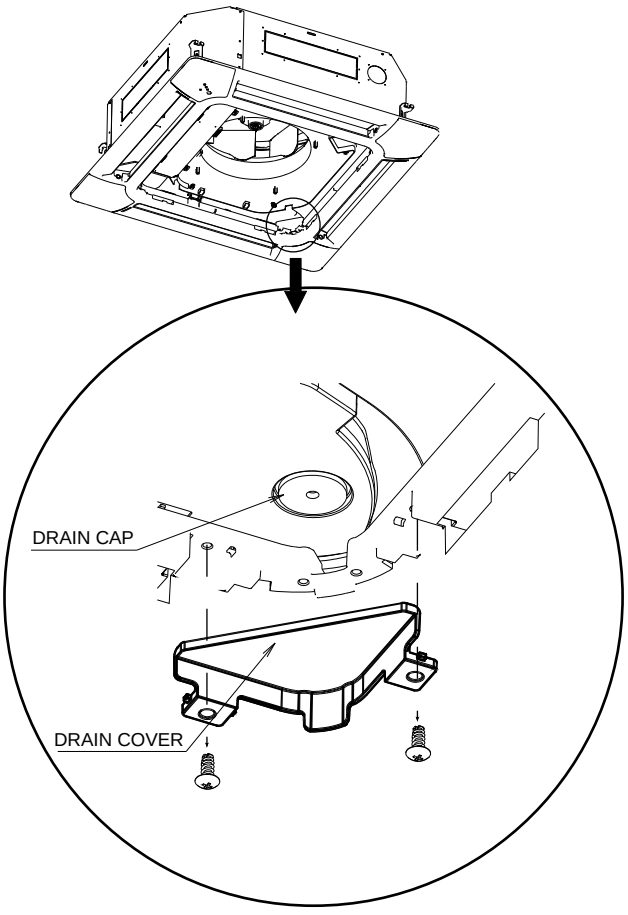


●Economy operation

The power consumption can be reduced.

●Simplification of drain water check

Drain and contamination check are possible without removing the decoration panel.



Can be easily checked by removing the drain cover.

INDOOR UNIT (SINGLE)

■ FUNCTION SETTING

● Outlet direction selection

• Performs operation matched to the number of outlets when 4 directions are unnecessary and outlets are blocked when the ceiling cassette is installed in a corner, etc.

4-way direction **3-way direction**

4-way direction mode: Set when there are 4 outlets (shipped state).
3-way direction mode: Set when there are 3 outlets.

● Ceiling switching function

Also delivers air to high ceilings by selecting the mode and raising the air flow according to the height of the ceiling.

High ceiling (Mode 2) **Standard ceiling (Standard)** **Low ceiling (Mode 1)**

Standard...Operates at normal air flow.
Mode 1 ...Air flow becomes smaller than normal.
Mode 2 ...Air flow becomes greater than normal.

● Cooling room temperature correction

● Heating room temperature correction

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

1-2. DUCT TYPE

■ MODEL

AR∗G36LMLA / AO∗G36LATT
AR∗G45LMLA / AO∗G45LATT

■ FEATURES

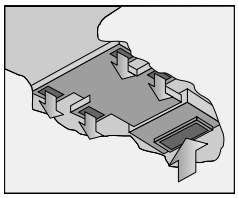
● Energy efficiency class

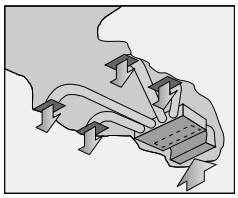
	MODEL
	AR∗G36LMLA
Cooling	A+
Heating	A+

● Flexible installation

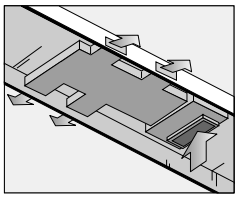
A high installation of degree of freedom according to the construction of the ceiling.

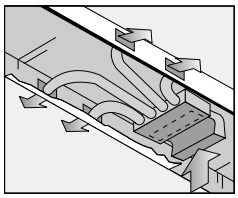
Embedded in Ceiling





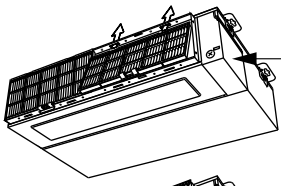
Hanging from Ceiling



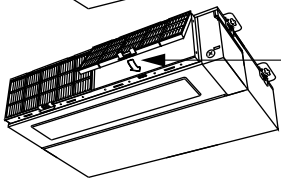


● Slim & compact design

In the case of bottom suction type, as seen from lower rear part.



Control Box united with main unit

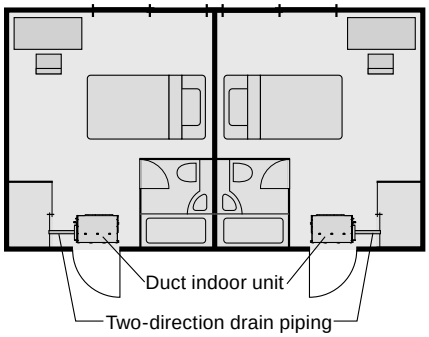


One-touch operating and easy-to-install long-life filter (optional)

In addition to the slim height of 270 mm which is our sales point, further compactification is attained by reducing 65 mm from the width with the flanking control box embedded inside the chassis.

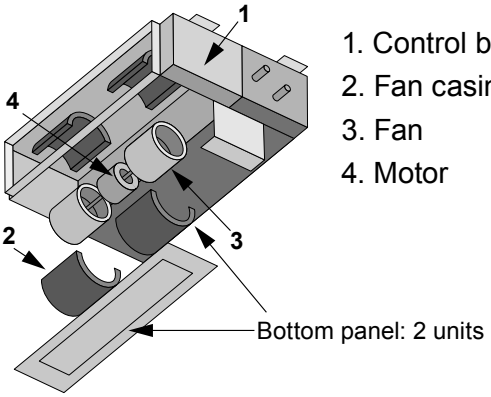
INDOOR UNIT (SINGLE)

● Two-direction drain piping



● Easy maintenance

It can easily access the fan and the motor by the divided panel structure.



1. Control box
2. Fan casing
3. Fan
4. Motor

Structural improvement is attained by making the bottom panel two pieces, front and rear.

The internal fan casing is also manufactured in two pieces, namely upper and lower. The maintenance of the motor and fan can be easily carried out by removing the rear panel and the lower part of the casing while leaving the main chassis installed.

● Quiet operation

Quiet operation can be performed in quiet mode.

● Economy operation

The power consumption can be reduced.

■ FUNCTION SETTING

● Static pressure mode setting

Air flow, noise, etc. can be used under the optimum conditions by selecting the static pressure mode matched to the installation conditions.

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

● Cooling room temperature correction

● Heating room temperature correction

1-3. HIGH STATIC PRESSURE DUCT TYPE

■ MODEL

AR∗G45LHTA / AO∗G45LATT
AR∗G54LHTA / AO∗G54LATT

■ FEATURES

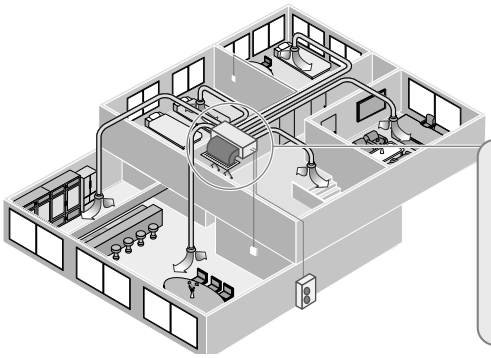
● Improvement of market suitability

Considerable improvement of installation work by compact size and light weight considering with the conditions of installation in the ceiling.

The size which the indoor unit can be installed in the spacing between the beams is required for the installation in the ceiling.

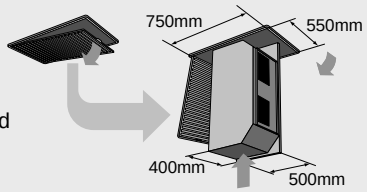
Restriction for dimension of width and height.

Indoor unit installation example



Carrying-in example in the ceiling

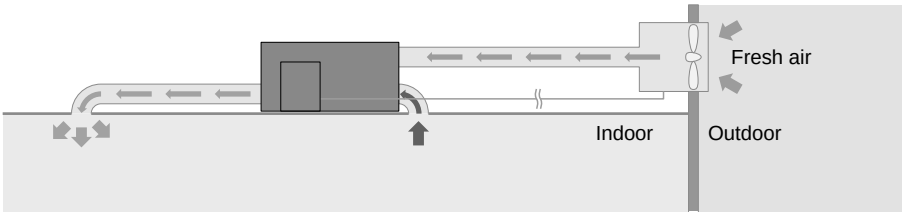
Restriction for space when being carried into the ceiling for replacement
(Ceiling intake grille)



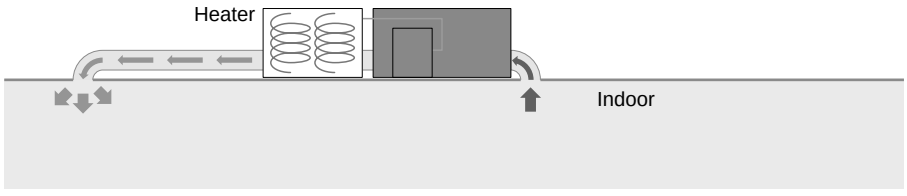
● Correspondence to Network

Various networks can be constructed according to the user needs.

1.Fresh air output port
Fresh air is connected with the fan of an indoor unit.



2.Electrical heater output port
Electrical heater operates at the time of heating.

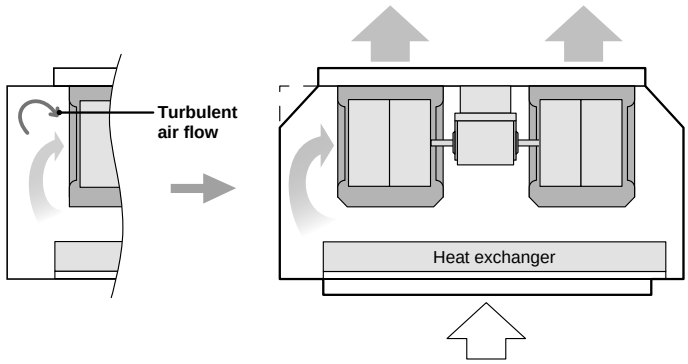


3.External input port
Start / Stop of the air conditioner can be changed from the external equipment.

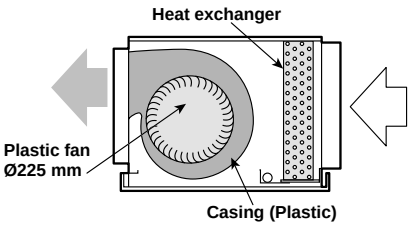
INDOOR UNIT (SINGLE)

● Operation sound (Low noise)

Turbulent air flow is reduced by cutting off the corners of conventional indoor unit front panel and fan case



Low noise is realized by adopting plastic case, plastic fan



● Economy operation

The power consumption can be reduced.

■ FUNCTION SETTING

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

● Cooling room temperature correction

● Heating room temperature correction

1-4. CEILING TYPE

■ MODEL

AB∗G36LRTA / AO∗G36LATT
AB∗G45LRTA / AO∗G45LATT
AB∗G54LRTA / AO∗G54LATT

■ FEATURES

● Energy efficiency class

	MODEL
	AB∗G36LRTA
Cooling	A++
Heating	A+

● Quiet operation

Air flow mode can be set in 4 steps and more detailed air flow setting is possible.

● Economy operation

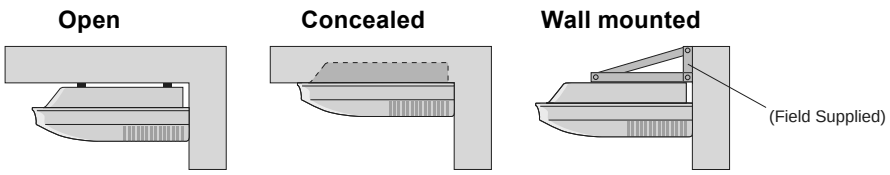
The power consumption can be reduced.

● Wired/wireless simultaneous use possible

Wired remote controller and wireless remote controller can be simultaneously used.

● Flexible installation

A high installation of the construction of the ceiling and degree of freedom corresponding to height is possible.

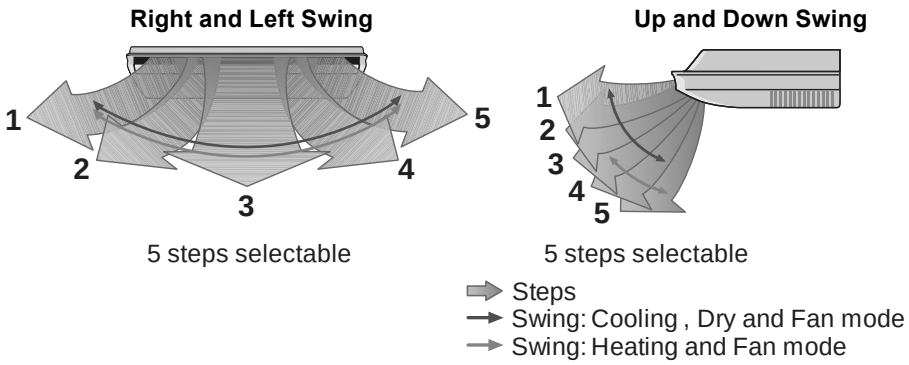


INDOOR UNIT (SINGLE)

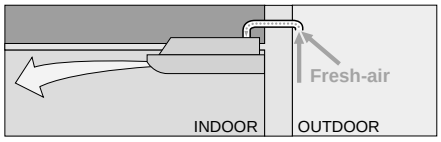
● Double auto swing

Combination of up/down and right/left air direction swing allows three-dimensional air direction control.

Since up/down air direction flaps operate automatically, according to the operating mode of the unit, it is possible to set the air direction based on the operating mode.



● Fresh-air intake



■ FUNCTION SETTING

● Ceiling switching function (standard/high ceiling)

Also delivers air to high ceilings by selecting the mode and raising the air flow according to the height of the ceiling.

Standard ...Operates at normal air flow.

Mode 1 ...Air flow becomes greater than normal.

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

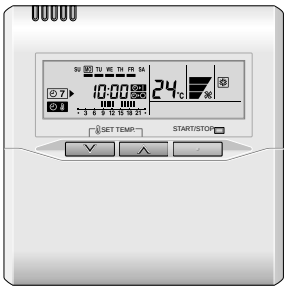
● Cooling room temperature correction

● Heating room temperature correction

2. REMOTE CONTROLLER

2-1. WIRED REMOTE CONTROLLER

■ FEATURES



- Various timer setup (ON/OFF/WEEKLY) are possible.
- Equipped with weekly timer as standard function. (Start/Stop function is twice per day for a week)
- When setting up a timer, start/stop and a temperature setup can be changed.
- When a failure occurs,the error code is displayed.
- Error history.(Last 16 error codes can be accessed.)
- Up to 16 indoor units can be simultaneously controlled.
- The room temperature can be controlled by being detective the temperature accurately with Built-in thermo sensor.

● Simple function setting

Setting of the air conditioner selection function is performed by remote controller.

● Powerful features and compact size

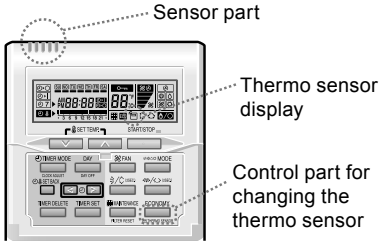
Individual control + Thermo sensor + Weekly timer + Setback timer = Wired remote controller

● Accurate and comfortable

Indoor temperature can be detected accurately by the inclusion of a thermo sensor in the body of the wired controller.

Our system can correspond to various scenes.

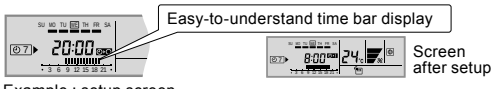
This wired remote controller and the optional remote sensor allows flexibility in sensor location, and suitable for all requirements.



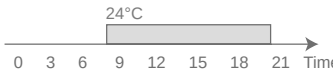
● Built-in timers

Weekly timer

Possible to set ON/OFF time to operate twice each day of the week.



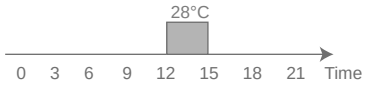
Example : setup screen
(Set to Wednesday: 8:00 to 20:00.)



Set back timer

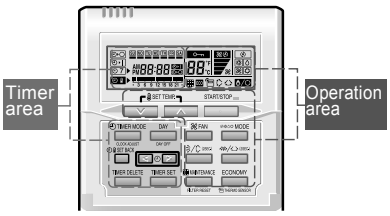
Possible to set temperature for two time spans and for each day of the week.

Example : setup screen
(Set from Sunday to Saturday: 12:00 to 15:00, 28 °C.)



At "Weekly timer" + "Set back timer" setup

● Easy-to-understand operation

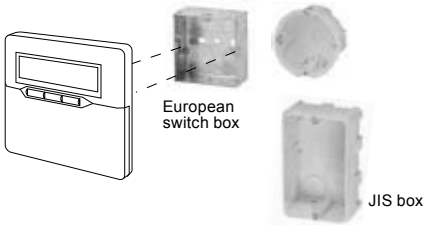


[Variable timer control]

The operation/display sections are zoned according to time and operation, enabling variable programming to match application.

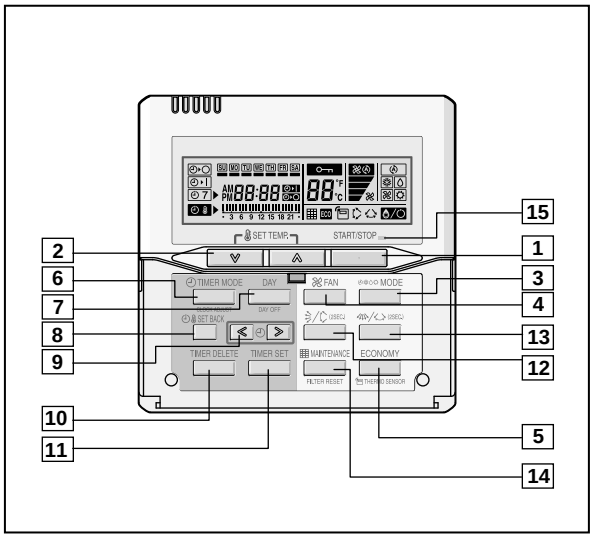
● Simple installation

Components are compatible with standard switch boxes. Flat back surface allows equipment to be installed wherever it is needed.

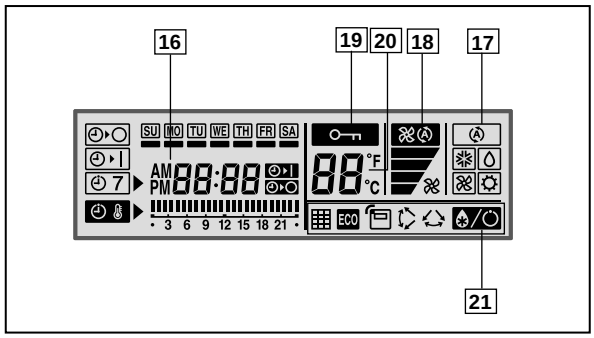


INDOOR UNIT (SINGLE)

■ FUNCTIONS



Display panel



1 **START/STOP button**
Pressed to start and stop operation.

2 **SET TEMP. button**
Selects the setting temperature.

3 **MODE button**
Selects the operating mode(AUTO, HEAT, FAN, COOL, DRY).

4 **FAN button**
Selects the fan speed (AUTO, QUIET, LOW, MED, HIGH).

5 **ECONOMY (THERMO SENSOR) button**
Turns the economy efficient mode on and off.

6 **TIMER MODE (CLOCK ADJUST) button**
Selects the timer mode (OFF TIMER, ON TIMER, WEEKLY TIMER). Set the current time.

7 **DAY (DAY OFF) button**
Temporarily cancels of one day timer.

8 **SET BACK button**
Pressed to select the set back timer.

9 **Set time button**
Pressed to set time.

10 **TIMER DELETE button**
The schedule of a weekly timer is deleted.

11 **TIMER SET button**
Sets the date, hour, minute and on-off time.

12 **Vertical airflow direction and swing button**
Push for two seconds to change the swing mode.

13 **Horizontal airflow direction and swing button**
Push for two seconds to change the swing mode.

14 **FILTER RESET button**

15 **Operation lamp**
Lights during operation and when the timer is on.

16 **Timer and clock display**

17 **Operation mode display**

18 **Fan speed display**

19 **Operation lock display**

20 **Temperature display**

21 **Function display**

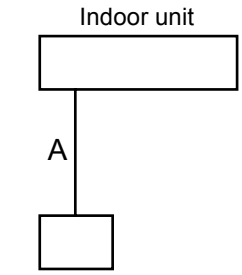
- Defrost display
- Thermo sensor display
- Economy display
- Vertical swing display
- Horizontal swing display
- Filter display

Note: Functions will be different due to type of indoor unit.
For details, please see operation manual.

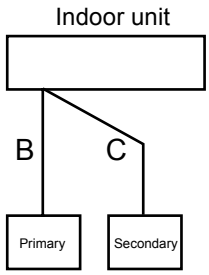
INDOOR UNIT (SINGLE)

■ SYSTEM DIAGRAM

● 1-remote controller



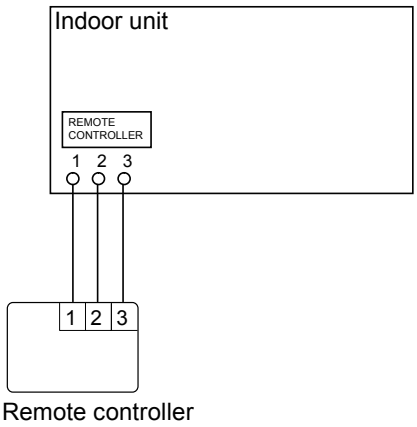
● 2-remote controllers



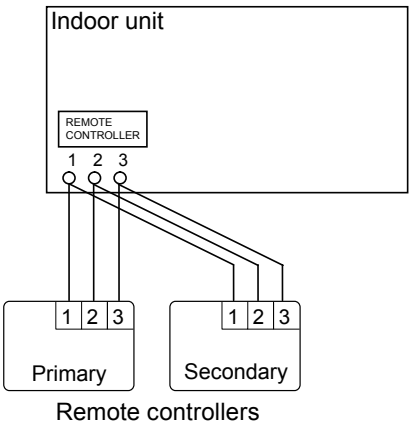
A , B , C : Remote controller cable.
Refer to next page
for detail specifications.
A ≦500m ; B+C ≦500m

■ ELECTRICAL WIRING

● 1-remote controller



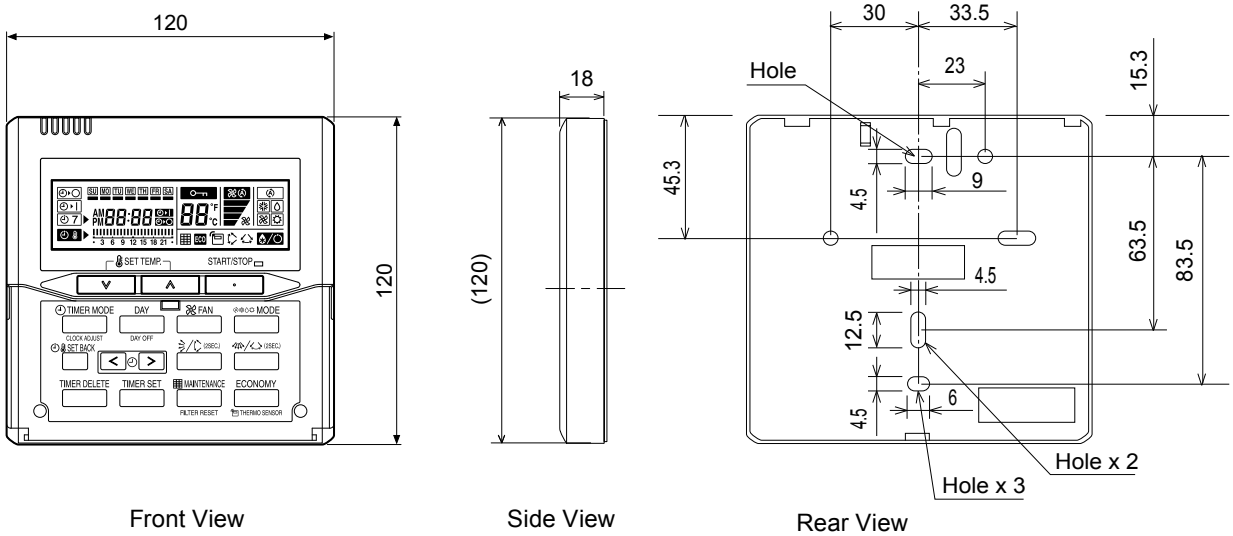
● 2-remote controllers



1 (RED) : 12V
2 (WHITE) : Signal
3 (BLACK) : COM

■ DIMENSION

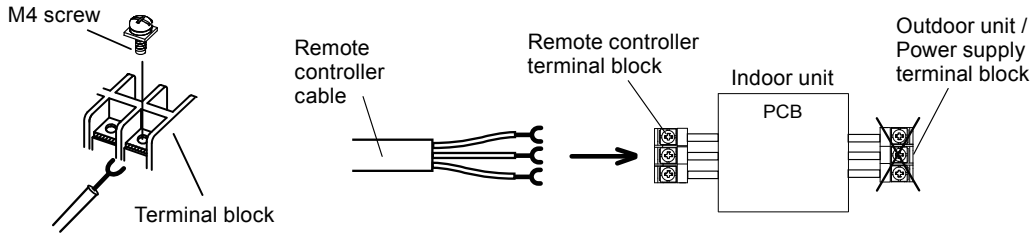
[Unit : mm]



INDOOR UNIT (SINGLE)

■ INSTALLATION

Connect the end of remote controller cable directly to the exclusive terminal block.



Note : It may be failed if it is connected to the outdoor unit or the terminal block for power supply.

■ PACKING LIST (ACCESSORIES)

Name and shape	Quantity	Application
Remote controller cable (10 m)*	1	For connecting the remote controller
Tapping screw (M4 x 16mm)	2	For installing the remote controller
Cable tie	1	For remote controller and remote controller cable binding
Installation manual	1	
Operation manual	1	

* : If necessary , use shielded cable (Field supplied) in accordance with the standard of the country.

■ WIRING SPECIFICATIONS

Use	Size	Wire type	Remarks
Remote controller cable	0.33mm^2 (22 AWG)	Polar 3 core	Use sheathed PVC cable

■ SPECIFICATIONS

SIZE	(H x W x D mm)	120 x 120 x 18
WEIGHT	(g)	160

INDOOR UNIT (SINGLE)

2-2. WIRELESS REMOTE CONTROLLER

■ FEATURES

- Four kinds of timer setup (ON/OFF/PROGRAM/SLEEP) are possible.
- Can be used jointly with wired remote controllers.
- Easy to change custom code (4 patterns).

● Built-in timers

Select from four different timer programs (ON/OFF/PROGRAM/SLEEP).

● Program timer

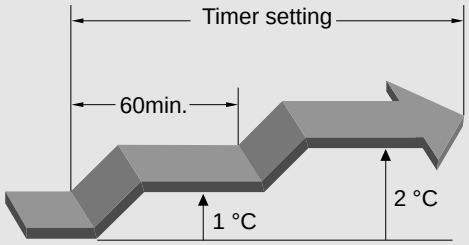
The program timer operates the ON and OFF timer once within a 24 hour period.

● Sleep timer

The sleep timer function automatically corrects the temperature thermostat setting according to the time setting to prevent excessive cooling and heating while sleeping.

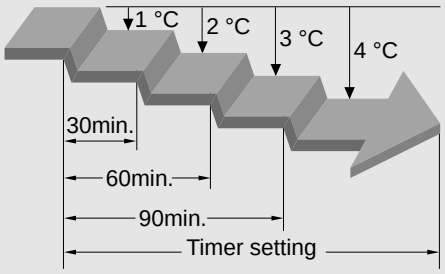
Cooling operation/dry operation

When the sleep timer is set, the set temperature automatically rises 1 °C every hour. The set temperature can rise up to a maximum of 2 °C.



Heating operation

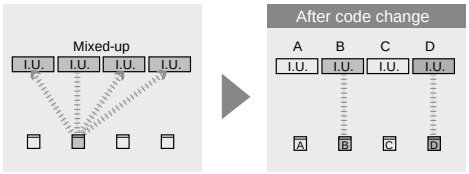
When the sleep timer is set, the set temperature automatically drops 1 °C every 30 minutes. The set temperature can drop to a maximum of 4 °C.



● Simple function setting

Setting of the air conditioner selection function is performed by remote controller.

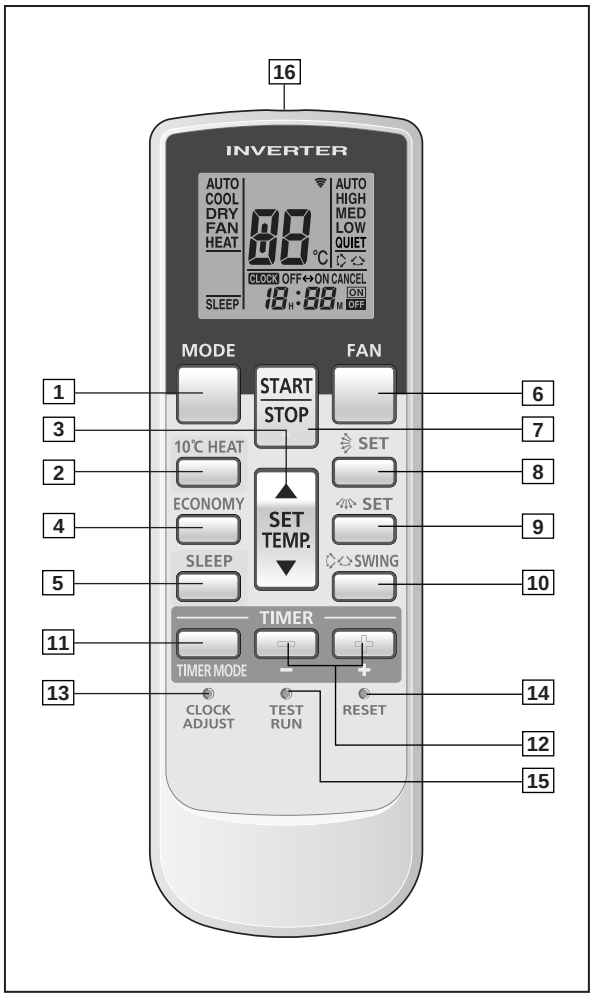
● Switching remote controller signal code



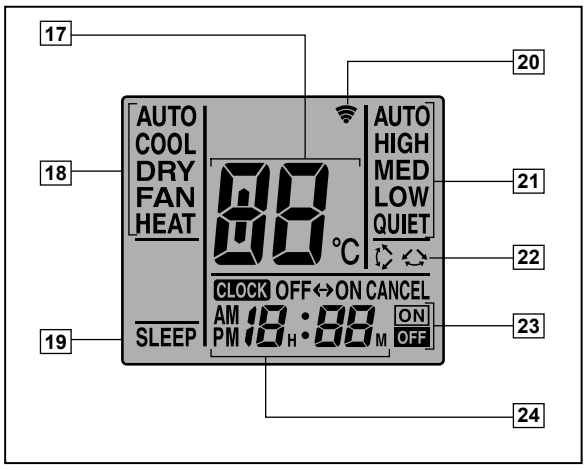
- Code selector switch eliminates unit being wrongly switched. (Up to 4 codes can be set.)

*I.U.=Indoor unit

■ FUNCTIONS



Display panel



1 MODE button
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT).
/Start / end R.C. signal code change. (Max 4 types)

2 10°C HEAT button
* In Group control system, does not function.

3 SET TEMP. button (▲ / ▼)
Sets the indoor temp./ Sets R.C. signal code.

4 ECONOMY button

5 SLEEP button
Pressed to select sleep timer.

6 FAN button
Selects the fan speed (AUTO, HIGH, MED, LOW, QUIET).

7 START/STOP button
Pressed to start and stop operation.

8 SET button (Vertical)
Air flow direction vertical set button.

9 SET button (Horizontal)
Air flow direction horizontal set button.

10 SWING button
Air flow direction swing button.

11 TIMER MODE button
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)
* In Group control system, does not function.

12 TIMER SET (⊕ / ⊖) button
Sets the current time and on-off time.
* In Group control system, does not function.

13 CLOCK ADJUST button
Sets the current time.

14 RESET button
Used when replacing batteries.

15 TEST RUN button
Used when testing the air conditioner after installation.

16 Signal transmitter

17 Temperature set display

18 Operating mode display

19 Sleep display

20 Transmit indicator

21 Fan speed display

22 Swing display

23 Timer mode display

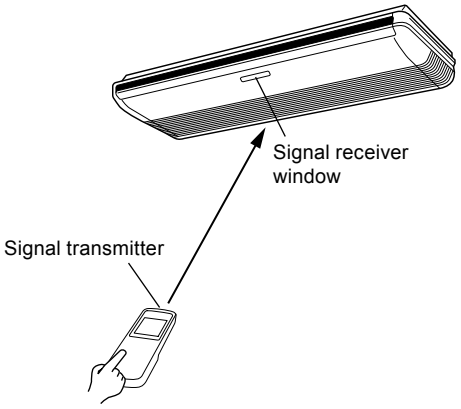
24 Clock display

Note: Functions will be different due to type of indoor unit.
For details, please see operation manual.

INDOOR UNIT (SINGLE)

INDOOR UNIT (SINGLE)

■ SYSTEM DIAGRAM

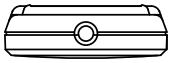


- Control signal might not be recognized in following cases:
  (i) A curtain or a wall, etc. exists between transmitter and receiver.
  (ii) There is an instant-start type (inverter type, etc.) fluorescent lamp in the room.
- Air conditioner might not work correctly when strong light hits the signal receiver window. Shut off the direct sunlight and also make illuminator far away from the receiver window.

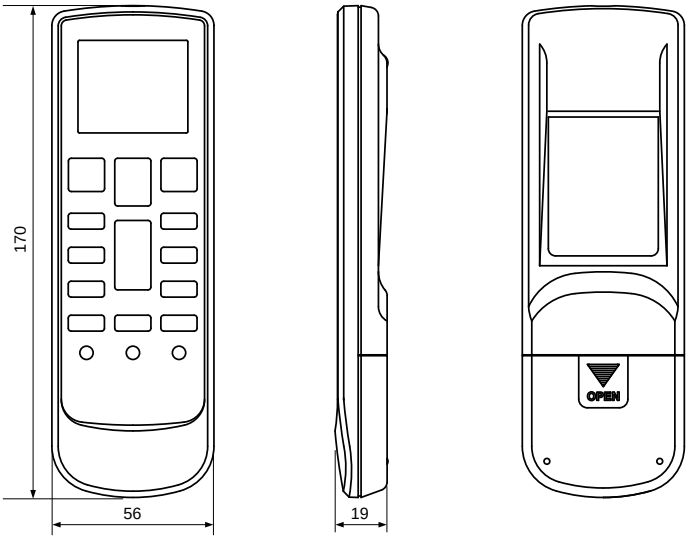
■ DIMENSIONS

● Controller

(Unit : mm)

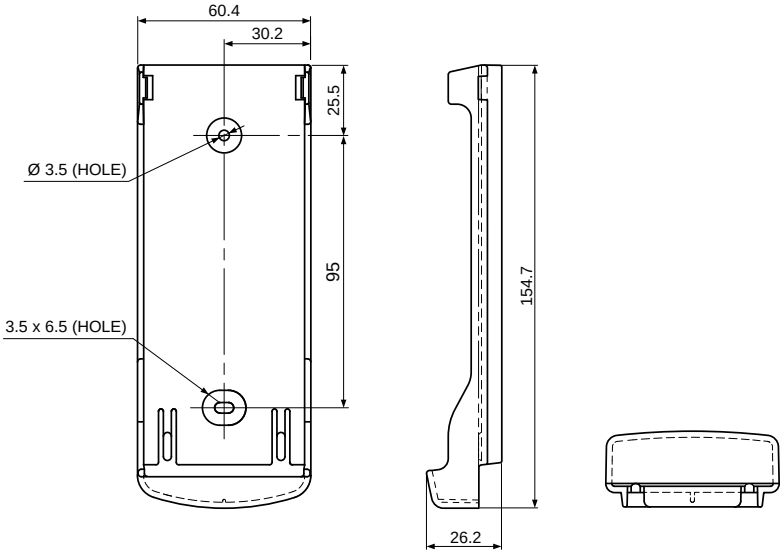


Top View



Front View　　Side View　　Rear View

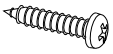
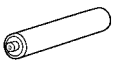
● Holder



Front View　　Side View　　Bottom View

INDOOR UNIT (SINGLE)

■ PACKING LIST (ACCESSORIES)

Name and shape	Quantity	Application
Remote controller holder	1	Use as remote controller holder
Tapping screw (M3 x 12 mm) 	2	For remote controller holder installation
Battery [1.5V (R03 / AAA)] 	2	For remote controller

■ SPECIFICATIONS

SIZE	(H x W x D mm)	170 x 56 x 19
WEIGHT	(g)	85 (w/o batteries)

3. SPECIFICATIONS

3-1. CASSETTE TYPE

Type					CASSETTE MODEL		
					INVERTER HEATPUMP		
Model name					AU∗G36LRLA	AU∗G45LRLA	AU∗G54LRLA
Power source					3N ~ 400V 50Hz		
Available voltage range					3N ~ 342V - 457V 50Hz		
Capacity	Cooling	Rated		kW	10.0	12.5	14.0
				Btu/h	34100	42700	47800
		Min.-Max.		kW	4.7 - 11.4	5.0 - 14.0	5.4 - 16.0
				Btu/h	16000 - 38900	17000 - 47800	18400 - 54600
	Heating	Rated		kW	11.2	14.0	16.0
				Btu/h	38200	47800	54600
		Min.-Max.		kW	5.0 - 14.0	5.4 - 16.2	5.8 - 18.0
				Btu/h	17100 - 47800	18400 - 55300	19800 - 61500
Input power	Cooling	Rated		kW	2.44	3.54	4.36
		Max.			5.12	5.80	6.48
	Heating	Rated			2.56	3.58	4.43
		Max.			5.12	5.80	6.48
Current	Cooling	Rated		A	3.7	5.3	6.5
	Heating				3.9	5.3	6.6
EER		Cooling		kW/kW	4.10	3.53	3.21
COP		Heating			4.38	3.91	3.61
Moisture removal				l/h (pints/h)	3.0 (5.3)	4.5 (7.9)	5.0 (8.8)
Maximum operating current *1		Cooling		A	7.9	8.9	9.9
		Heating			7.9	8.9	9.9
Fan	Airflow rate	Cooling	High	m^3/h	1800	1900	2000
			Med		1430	1640	1700
			Low		1250	1460	1530
			Quiet		1150	1250	1300
		Heating	High		1800	1900	2000
			Med		1430	1640	1700
			Low		1250	1460	1530
			Quiet		1150	1250	1300
	Type × Q'ty				Turbo × 1		
	Motor output			W	80		
Sound pressure level		Cooling	High	dB (A)	44	46	47
			Med		39	42	43
			Low		36	40	41
			Quiet		33	36	37
		Heating	High		44	46	47
			Med		39	42	43
			Low		36	40	41
			Quiet		33	36	37
Heat exchanger type		Dimensions (H × W × D)		mm	252 × 2021 × 13.3 252 × 2087 × 13.3 252 × 2153 × 13.3		
		Fin pitch			1.3		
		Rows x Stages			3 x 12		
		Pipe type			Copper		
		Fin type			Aluminium		
Dimensions (H × W × D)		Net		mm	288 × 840 × 840		
		Gross			360 × 960 × 985		
Weight		Net		kg	26		
		Gross			31		
Connection pipe		Size	Liquid	mm	Ø9.52 (3/8 in.)		
			Gas		Ø15.88 (5/8 in.)		
		Method			Flare		
Drain hose		Material			PVC		
		Size		mm	VP25 [Ø25 (I.D.), Ø32 (O.D.)]		
Operation range		Cooling		°C	18 to 32		
				%RH	80 or less		
		Heating		°C	16 to 30		
Cassette grille		Model name			UTG-UG∗A-W		
		Material			PS		
		Colour			WHITE (Approximate colour of MUNSELL N 9.25/)		
		Dimensions (H × W × D)	Net	mm	50 × 950 × 950		
			Gross		115 × 1120 × 1000		
		Weight	Net	kg	5.5		
			Gross		8.5		
Remote controller type					Wired		

Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27 °CDB / 19 °CWB.and outdoor temperature of 35 °CDB/24 °CWB.
Heating : Indoor temperature of 20 °CDB / 15 °CWB.and outdoor temperature of 7 °CDB/6 °CWB.
Pipe length : 5 m, Height difference : 0 m.(Outdoor unit - Indoor unit)
The protective function might work when using it outside the operation range.
*1 : The maximum current is the maximum value when the operated with in the operation range.

Model name				AU∗G36LRLA
Energy efficiency class	Cooling			A++
	Heating (Average)			A+
Pdesign	Cooling		kW	10.0 (35°C)
	Heating (Average)			10.0 (-10°C)
SEER	Cooling		kWh/kWh	6.50
SCOP	Heating (Average)			4.30
Annual energy consumption	QCE		kWh/a	538
	QHE (Average)			3253
Sound power level	Cooling	High	dB (A)	58
	Heating			58

INDOOR UNIT (SINGLE)

3-2. DUCT TYPE

Type					DUCTED MODEL	
					INVERTER HEATPUMP	
Model name					AR∗G36LMLA	AR∗G45LMLA
Power source					3N~ 400V 50Hz	
Available voltage range					3N~ 342V - 457V 50Hz	
Capacity	Cooling	Rated		kW	10.0	12.5
				Btu/h	34100	42700
		Min.-Max.		kW	4.7 - 11.4	5.0 - 14.0
				Btu/h	16000 - 38900	17100 - 47800
	Heating	Rated		kW	11.2	14.0
				Btu/h	38200	47800
		Min.-Max.		kW	5.0 - 14.0	5.4 - 16.2
				Btu/h	17100 - 47800	18400 - 55300
Input power	Cooling	Rated		kW	2.84	3.89
		Max.			5.12	5.80
	Heating	Rated			2.87	3.88
		Max.			5.12	5.80
Current	Cooling	Rated		A	4.3	5.8
	Heating				4.4	5.8
EER		Cooling		kW/kW	3.52	3.21
COP		Heating			3.90	3.61
Moisture removal				l/h (pints/h)	3.0 (5.3)	4.5 (7.9)
Maximum operating current *1		Cooling		A	8.5	9.5
		Heating			8.5	9.5
Fan	Airflow rate	Cooling	High	m^3/h	1800	2100
			Med		1550	1750
			Low		1230	1350
			Quiet		970	1070
		Heating	High		1850	2100
			Med		1550	1750
			Low		1230	1350
			Quiet		970	1070
	Type × Q'ty				Sirocco × 2	
	Motor output			W	197	
Recommended static pressure				Pa	30 to 150	30 to 150
Sound pressure level		Cooling	High	dB(A)	38	42
			Med		36	38
			Low		31	32
			Quiet		26	28
		Heating	High		40	42
			Med		36	38
			Low		31	32
			Quiet		26	28
Heat exchanger type		Dimensions (H × W × D)		mm	294 × 1000 × 53.2	
		Fin pitch			1.40	
		Rows x Stages			4 × 14	
		Pipe type			Copper	
		Fin type			Aluminium	
Enclosure		Material			Steel	
		Colour			-	
Dimensions (H×W ×D)	Net			mm	270 × 1135 × 700	
	Gross				300 × 1320 × 790	
Weight	Net			kg	40	
	Gross				47	
Connection pipe	Size	Liquid		mm	Ø9.52 (Ø3 / 8 in.)	
		Gas			Ø15.88 (Ø5 / 8 in.)	
	Method				Flare	
Drain port	Material				Steel	
	Size			mm	Ø36.0 (I.D.), Ø38.0 (O.D.)	
Operation range		Cooling		°C	18 to 32	
				%RH	80 or less	
		Heating		°C	16 to 30	
Remote controller type					Wired	

Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27 °CDB / 19 °CWB.and outdoor temperature of 35 °CDB/24 °CWB.
Heating : Indoor temperature of 20 °CDB / 15 °CWB.and outdoor temperature of 7 °CDB/6 °CWB.
Standard static pressure : AR∗G36LM: 47Pa AR∗G45LM: 60Pa
Static pressure mode : AR∗G36LM: Normal, AR∗G45LM: High static pressure mode 1
Pipe length : 5 m, Height difference : 0 m.(Outdoor unit - Indoor unit)
Sound pressure level : Install a 2m duct to the outlet port and a 1m duct to the suction poit and measure.
The protective function might work when using it outside the operation range.
Drain hose should be field supplied.
*1 : The maximum current is the maximum value when the operated with in the operation range.

Model name				AR∗G36LMLA
Energy efficiency class	Cooling			A+
	Heating (Average)			A+
Pdesign	Cooling		kW	10.0 (35°C)
	Heating (Average)			10.0 (-10°C)
SEER	Cooling		kWh/kWh	5.80
SCOP	Heating (Average)			4.00
Annual energy consumption	QCE		kWh/a	603
	QHE (Average)			3497
Sound power level	Cooling	High	dB (A)	65
	Heating			67

INDOOR UNIT (SINGLE)

3-3. HIGH STATIC PRESSURE DUCT TYPE

Type					DUCTED MODEL	
					INVERTER HEATPUMP	
Model name					AR∗G45LHTA	AR∗G54LHTA
Power source					3N~ 400V 50Hz	
Available voltage range					3N~ 342V - 457V 50Hz	
Capacity	Cooling	Rated		kW	12.5	14.0
				Btu/h	42700	47800
		Min.-Max.		kW	5.0 - 14.0	5.4 - 16.0
				Btu/h	17100 - 47800	18400 - 54600
	Heating	Rated		kW	14.0	16.0
				Btu/h	47800	54600
		Min.-Max.		kW	5.4 - 16.2	5.8 - 18.0
				Btu/h	18400 - 55300	19800 - 61500
Input power	Cooling	Rated		kW	4.06	4.65
		Max.			6.14	6.83
	Heating	Rated			3.67	4.37
		Max.			6.14	6.83
Current	Cooling	Rated		A	6.1	6.9
	Heating				5.5	6.5
EER		Cooling		kW/kW	3.08	3.01
COP		Heating			3.81	3.66
Moisture removal				l/h (pints/h)	1.5 (2.6)	2.5 (4.4)
Maximum operating current *1		Cooling		A	11.0	12.0
		Heating			11.0	12.0
Fan	Airflow rate	Cooling	High	m^3/h	3350	3350
			Med		2850	2850
			Low		2430	2430
			Quiet		-	-
		Heating	High		3350	3350
			Med		2850	2850
			Low		2430	2430
			Quiet		-	-
	Type × Q'ty				Sirocco × 2	
	Motor output			W	490	
Recommended static pressure				Pa	100 to 250	100 to 250
Sound pressure level		Cooling	High	dB(A)	47	47
			Med		43	43
			Low		40	40
			Quiet		-	-
		Heating	High		47	47
			Med		43	43
			Low		40	40
			Quiet		-	-
Heat exchanger type		Dimensions (H × W × D)		mm	336 × 890 × 53.2	
		Fin pitch			1.30	
		Rows x Stages			4 × 16	
		Pipe type			Copper	
		Fin type			Aluminium	
Enclosure		Material			Steel	
		Colour			-	
Dimensions (H × W × D)	Net			mm	400 × 1050 × 500	
	Gross				460 × 1230 × 640	
Weight	Net			kg	46	
	Gross				51	
Connection pipe	Size	Liquid		mm	Ø9.52 (Ø3 / 8 in.)	
		Gas			Ø15.88 (Ø5 / 8 in.)	
	Method				Flare	
Drain port	Material				Steel	
	Size			mm	Ø23.4 (I.D.), Ø25.4 (O.D.)	
Operation range		Cooling		°C	18 to 32	
				%RH	80 or less	
		Heating		°C	16 to 30	
Remote controller type					Wired	

Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27 °CDB / 19 °CWB.and outdoor temperature of 35 °CDB/24 °CWB.
Heating : Indoor temperature of 20 °CDB / 15 °CWB.and outdoor temperature of 7 °CDB/6 °CWB.
Standard static pressure : 100 Pa.
Pipe length : 5 m, Height difference : 0 m.(Outdoor unit - Indoor unit)
Sound pressure level : Install a 2m duct to the outlet port and a 1m duct to the suction poit and measure.
The protective function might work when using it outside the operation range.
Drain hose should be field supplied.
*1 : The maximum current is the maximum value when the operated with in the operation range.

3-4. CEILING TYPE

Type					CEILING MODEL		
					INVERTER HEATPUMP		
Model name					AB∗G36LRTA	AB∗G45LRTA	AB∗G54LRTA
Power source					3N~ 400V 50Hz		
Available voltage range					3N~ 342V - 457V 50Hz		
Capacity	Cooling	Rated		kW	10.0	12.5	14.0
				Btu/h	34100	42700	47800
		Min.-Max.		kW	4.7-11.4	5.0-14.0	5.4-16.0
				Btu/h	16000-38900	17000-47800	18400-54600
	Heating	Rated		kW	11.2	14.0	16.0
				Btu/h	38200	47800	54600
		Min.-Max.		kW	5.0-14.0	5.4-16.2	5.8-18.0
				Btu/h	17100-47800	18400-55300	19800-61500
Input power	Cooling	Rated		kW	2.84	3.89	4.65
		Max.			5.12	5.80	6.48
	Heating	Rated			2.87	3.88	4.67
		Max.			5.12	5.80	6.48
Current	Cooling	Rated		A	4.3	5.8	6.9
	Heating				4.4	5.8	6.9
EER		Cooling		kW/kW	3.52	3.21	3.01
COP		Heating			3.90	3.61	3.43
Moisture removal				l/h (pints/h)	3.0 (5.3)	4.5 (7.9)	5.0 (8.8)
Maximum operating current *1		Cooling		A	7.9	8.9	9.9
		Heating			7.9	8.9	9.9
Fan	Air flow rate	Cooling	High	m^3/h	1900	2100	2300
			Med		1500	1700	1950
			Low		1200	1400	1600
			Quiet		1000	1100	1300
		Heating	High		1900	2100	2300
			Med		1500	1700	1950
			Low		1200	1400	1600
			Quiet		1000	1100	1300
	Type × Q'ty				Sirocco× 4		
	Motor output			W	130		
Sound pressure level		Cooling	High	dB (A)	47	49	51
			Med		43	45	48
			Low		37	39	42
			Quiet		32	34	38
		Heating	High		47	49	51
			Med		43	45	48
			Low		37	39	42
			Quiet		32	34	38
Heat exchanger type		Dimensions (H × W × D)		mm	252 x 1350 x 39.9		252 x 1350 x 39.9 168 x 1350 x 13.3
		Fin pitch			1.45		1.45
		Rows x Stages			3 x 12		3 x 12 + 1 x 8
		Pipe type			Copper		
		Fin type			Aluminium		
Enclosure		Material			ABS		
		Colour			WHITE (Approximate colour of MUNSELL N9.25/)		
Dimensions (H × W × D)	Net			mm	240 × 1660 × 700		
	Gross				318 × 1800 × 795		
Weight	Net			kg	46		48
	Gross				58		60
Connection pipe	Size	Liquid		mm	Ø9.52 (3/8 in.)		
		Gas			Ø15.88 (5/8 in.)		
	Method				Flare		
Drain port	Material				ABS		
	Size			mm	Ø21.5 (I.D.), Ø26.0 (O.D.)		
Operation range		Cooling		°C	18 to 32		
				%RH	80 or less		
		Heating		°C	16 to 30		
Remote controller type					Wireless		

Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27 °CDB / 19 °CWB.and outdoor temperature of 35 °CDB/24 °CWB.
Heating : Indoor temperature of 20 °CDB / 15 °CWB.and outdoor temperature of 7 °CDB/6 °CWB.
Pipe length : 5 m, Height difference : 0 m.(Outdoor unit - Indoor unit)
The protective function might work when using it outside the operation range.
Drain hose should be field supplied.
*1 : The maximum current is the maximum value when the operated with in the operation range.

INDOOR UNIT (SINGLE)

Model name				AB∗G36LRTA
Energy efficiency class	Cooling			A++
	Heating (Average)			A+
Pdesign	Cooling		kW	10.0 (35°C)
	Heating (Average)			10.0 (-10°C)
SEER	Cooling		kWh/kWh	6.10
SCOP	Heating (Average)			4.10
Annual energy consumption	QCE		kWh/a	573
	QHE (Average)			3414
Sound power level	Cooling	High	dB (A)	61
	Heating			61

INDOOR UNIT (SINGLE)

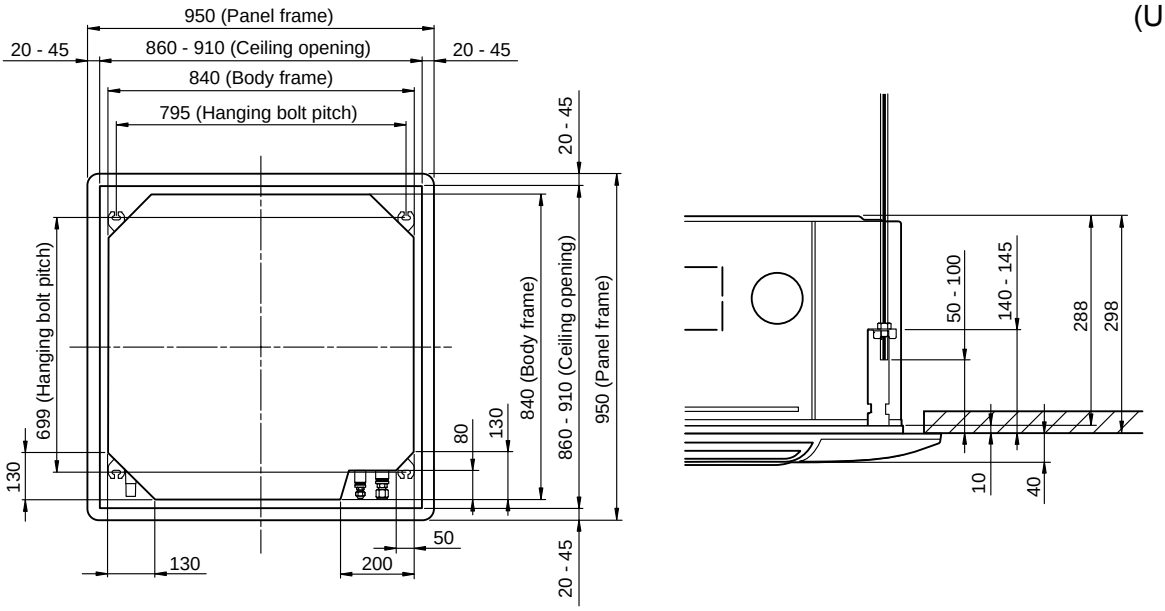
4. DIMENSIONS

4-1. CASSETTE TYPE

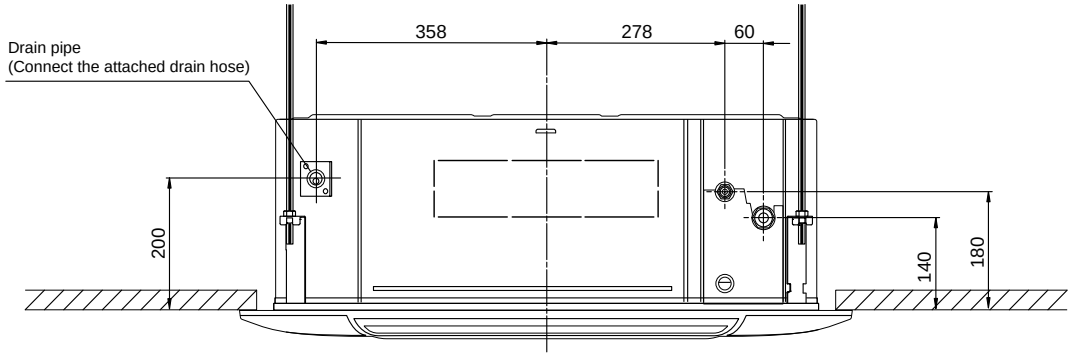
■MODEL: AU∗G36LR, AU∗G45LR, AU∗G54LR

●Ceiling opening and hanging bolt pitch

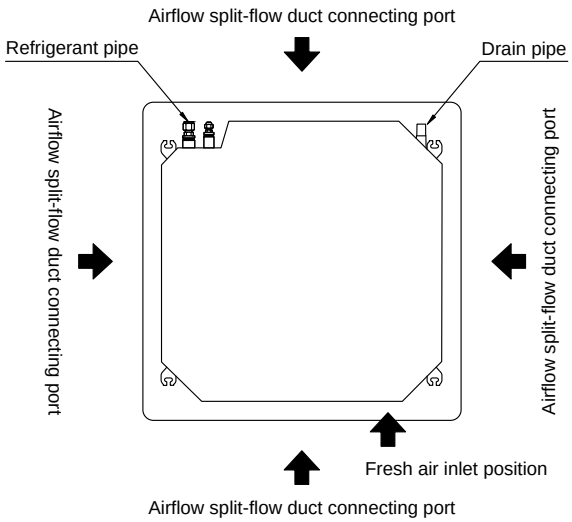
(Unit : mm)

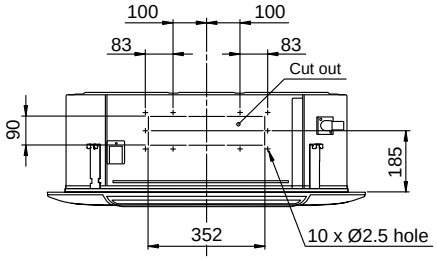


●Refrigerant piping and drain piping positions

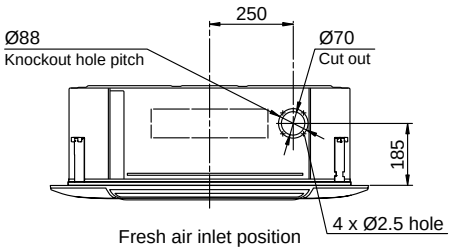


●Airflow split-flow duct and fresh air inlet positions


Airflow split-flow duct connecting port
Refrigerant pipe
Drain pipe
Airflow split-flow duct connecting port
Airflow split-flow duct connecting port
Fresh air inlet position
Airflow split-flow duct connecting port



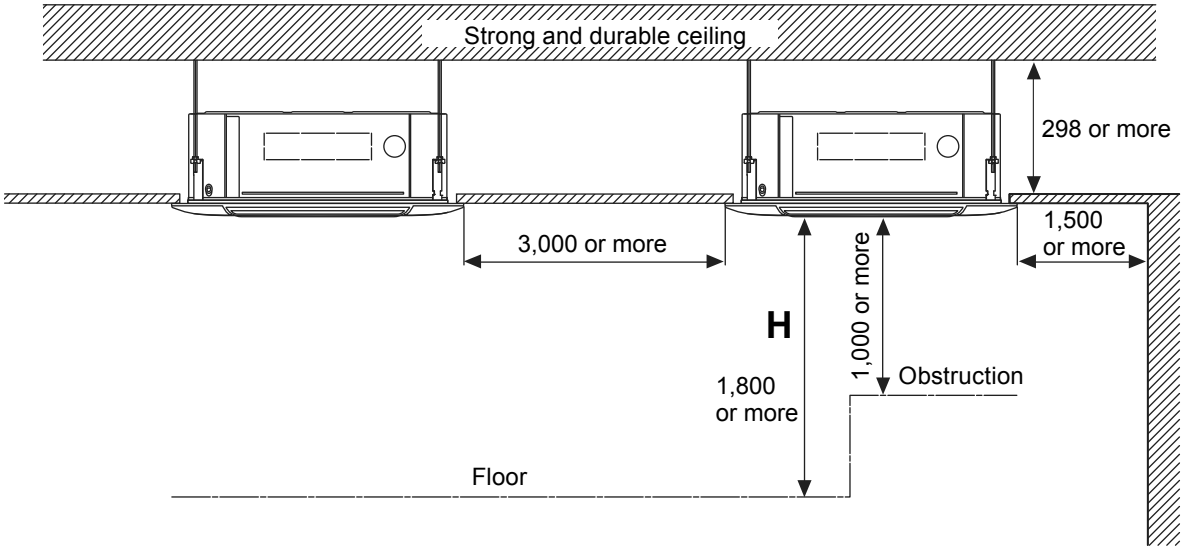
Detailed diagram of branched duct connecting port (4 sides)



INDOOR UNIT (SINGLE)

■ INSTALLATION PLACE

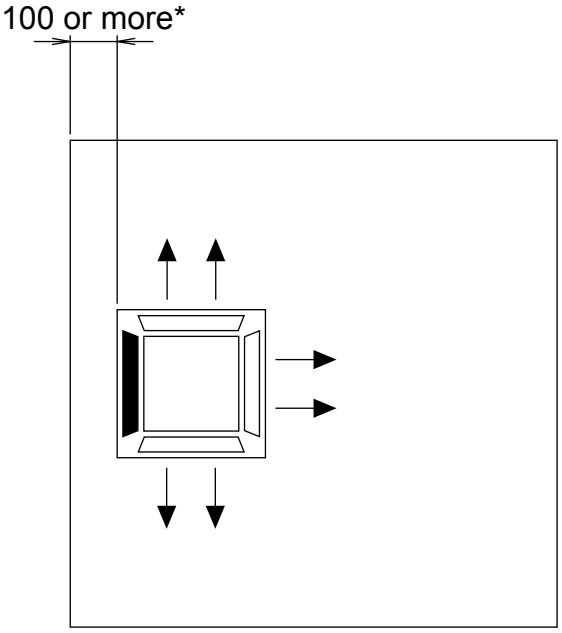
(Unit : mm)



	H (The maximum height from floor to ceiling) (mm)		
Model name	AU∗G36LR	AU∗G45LR	AU∗G54LR
Low mode	2,700	2,700	2,700
Standard mode	3,200	3,200	3,200
High Ceiling mode	4,200	4,200	4,200

● 3-way directions setting

(Unit : mm)



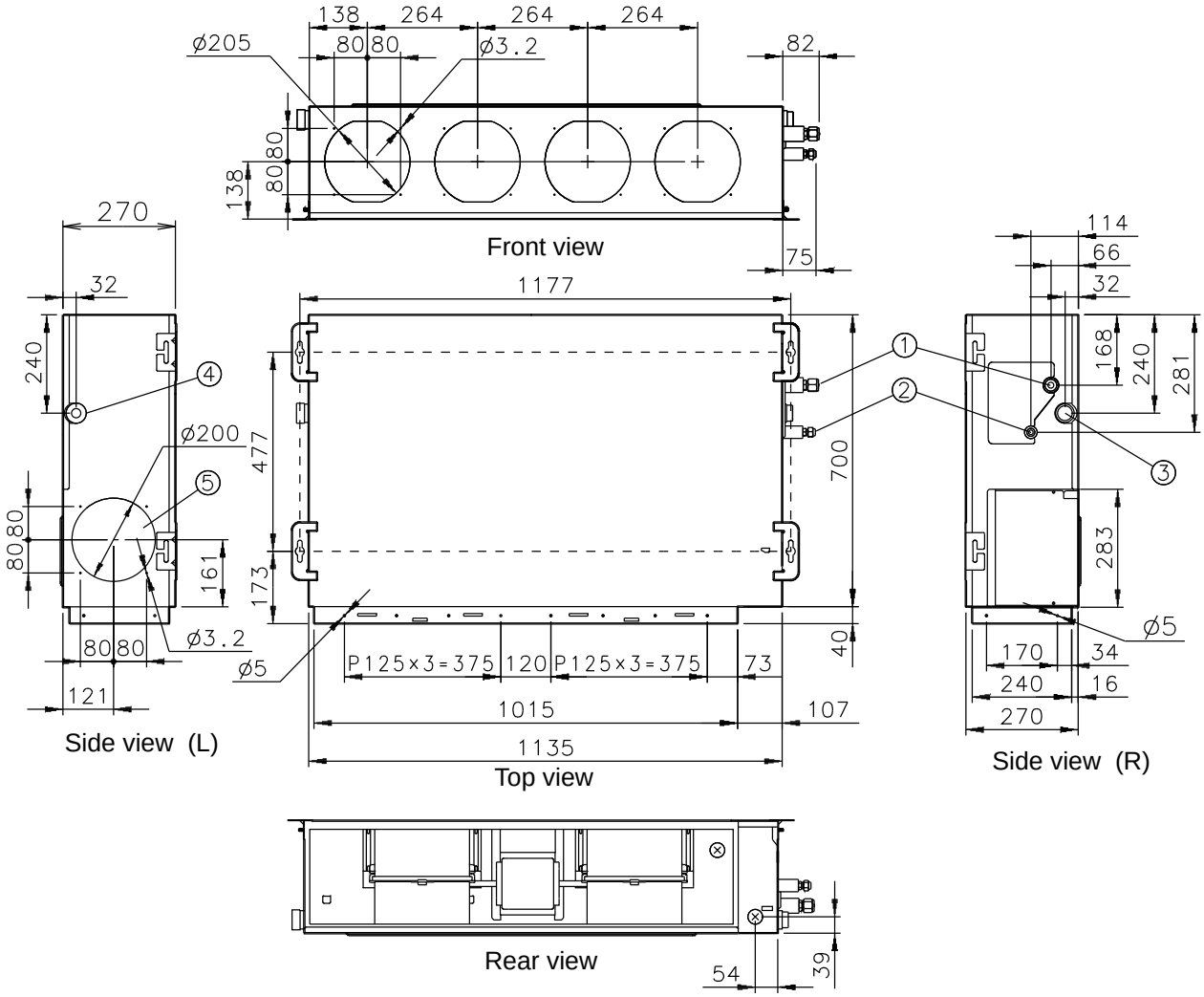
To set “3-way directions”, the air outlet shutter plate (UTR-YDZC) sold separately must be installed and “outlet-direction” switched to “3-way” by remote controller.

*When installing the indoor unit, be careful about the maintenance hole.

4-2. DUCT TYPE

■MODEL: AR∗G36LM, AR∗G45LM

(Unit : mm)

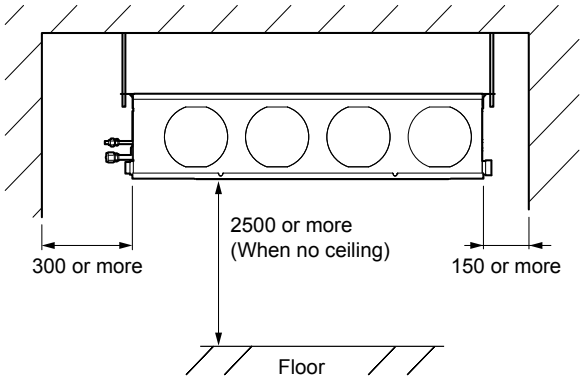


① Refrigerant piping flare connection (Gas)
② Refrigerant piping flare connection (Liquid)
③ Drain piping connection
④ Drain piping connection with cap.
⑤ Knock out hole for fresh air.

INDOOR UNIT (SINGLE)

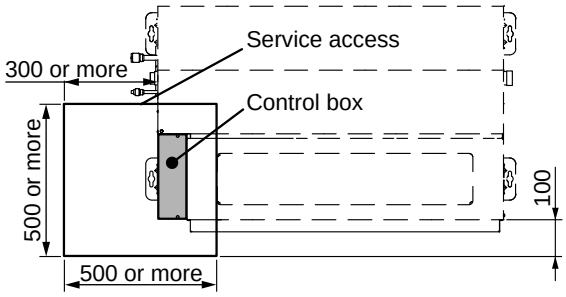
■ INSTALLATION PLACE

(Unit : mm)

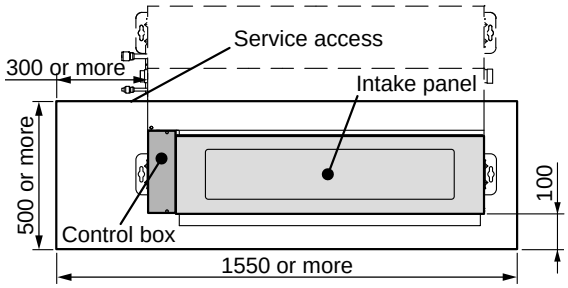


■ MAINTENANCE SPACE

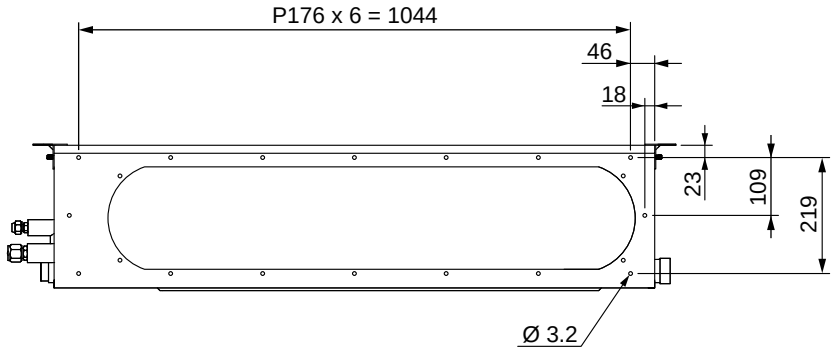
It shall be possible to install and remove the control box.



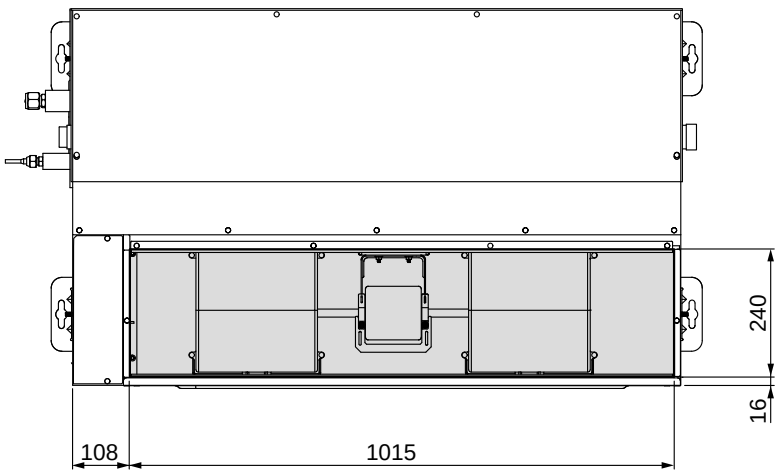
It shall be possible to install and remove the control box, fan units and filter.



■ WHEN USING A SQUARE DUCT



■ BOTTOM AIR INTAKE HOLE

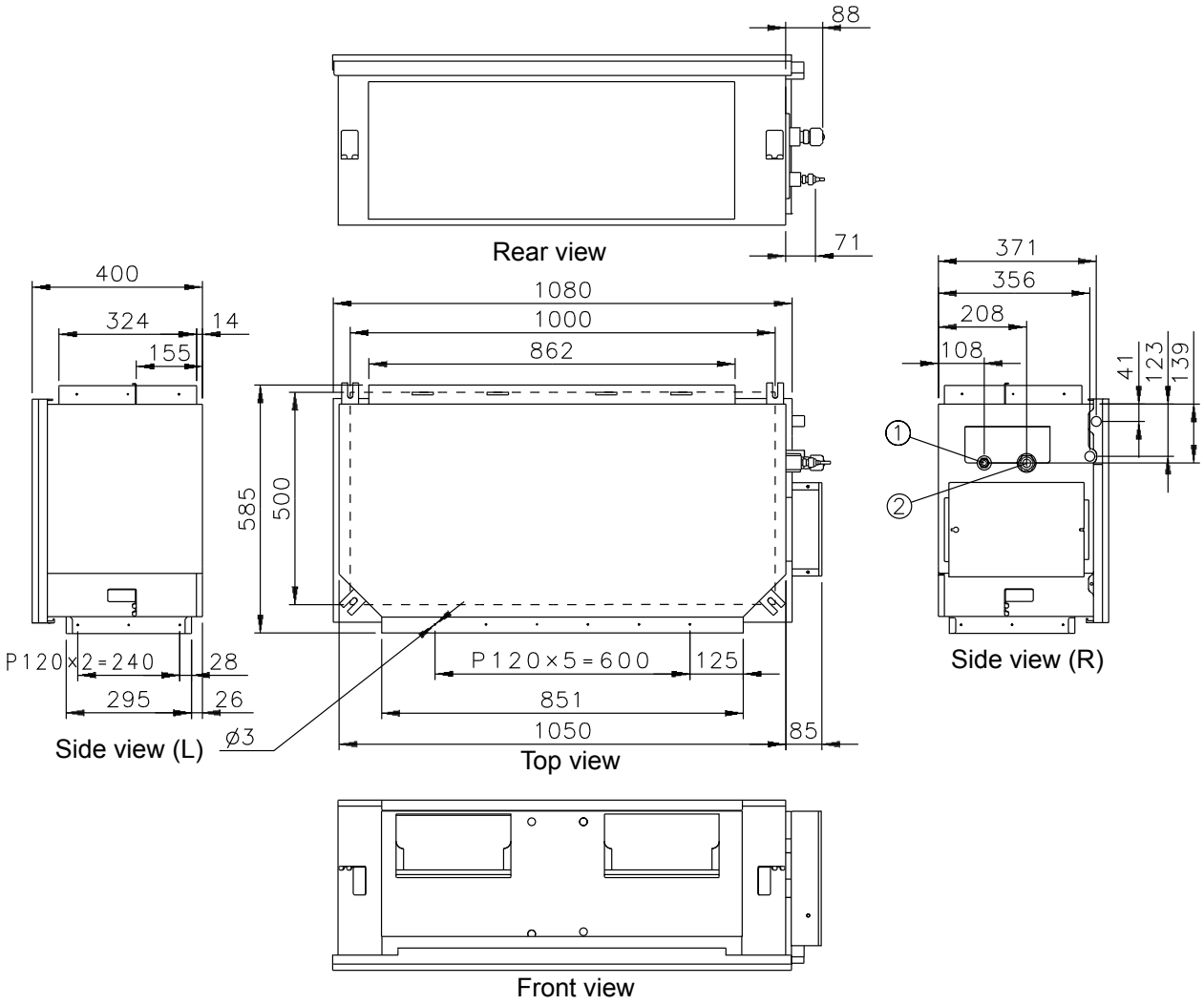


INDOOR UNIT (SINGLE)

4-3. HIGH STATIC PRESSURE DUCT TYPE

■ MODEL: AR∗G45LH, AR∗G54LH

(Unit : mm)



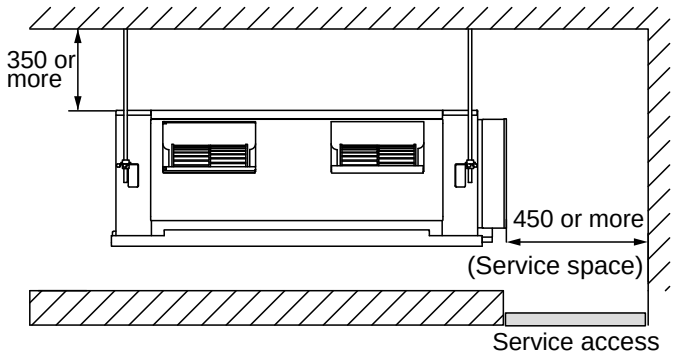
① Refrigerant piping flare connection (Liquid)
② Refrigerant piping flare connection (Gas)

INDOOR UNIT (SINGLE)

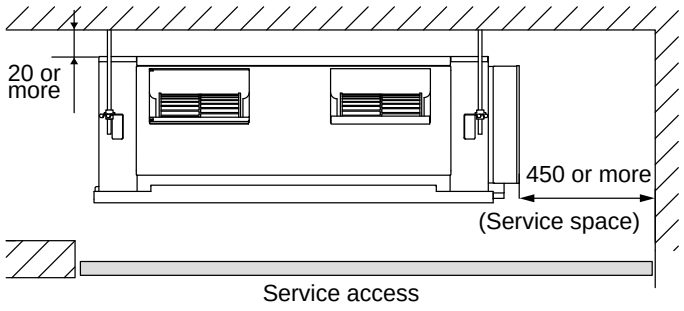
■ INSTALLATION PLACE

(Unit : mm)

Installation by which service space is made on top of the unit (recommended).

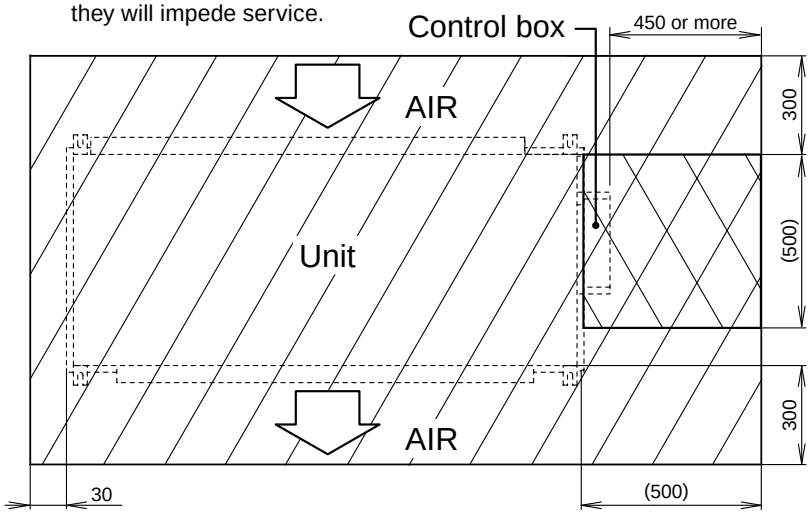


Installation by which service is carried out from the bottom of the unit.



■ MAINTENANCE SPACE

Provide a service access for inspection purposes as shown below.
Do not place any wiring or illumination in the service space, as they will impede service.



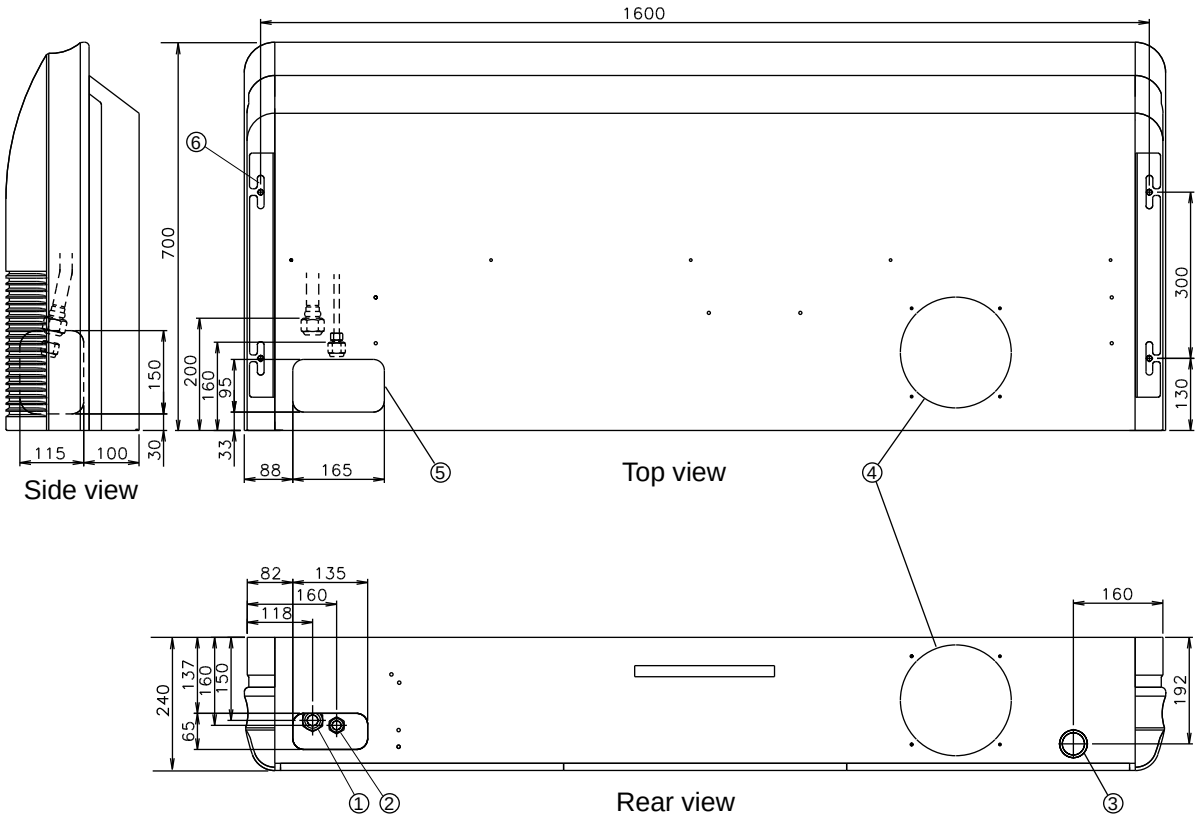
: Service access : Service space

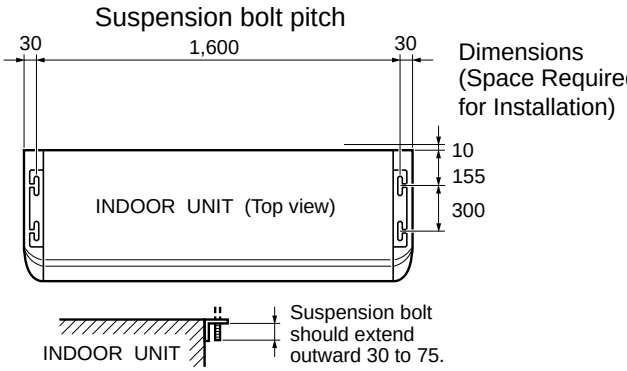
INDOOR UNIT (SINGLE)

4-4. CEILING TYPE

■MODEL: AB∗G36LR, AB∗G45LR, AB∗G54LR

(Unit : mm)



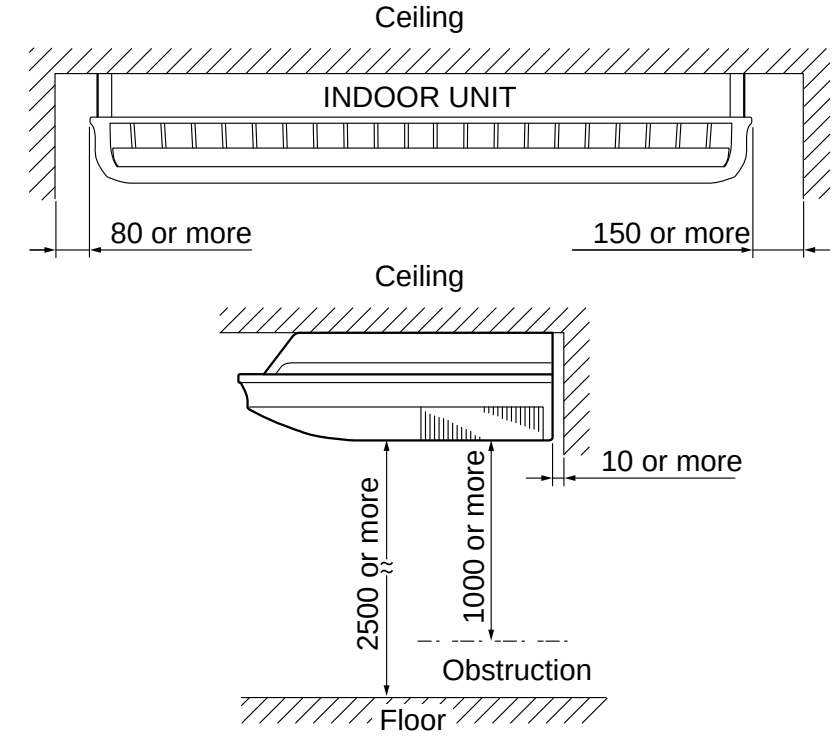


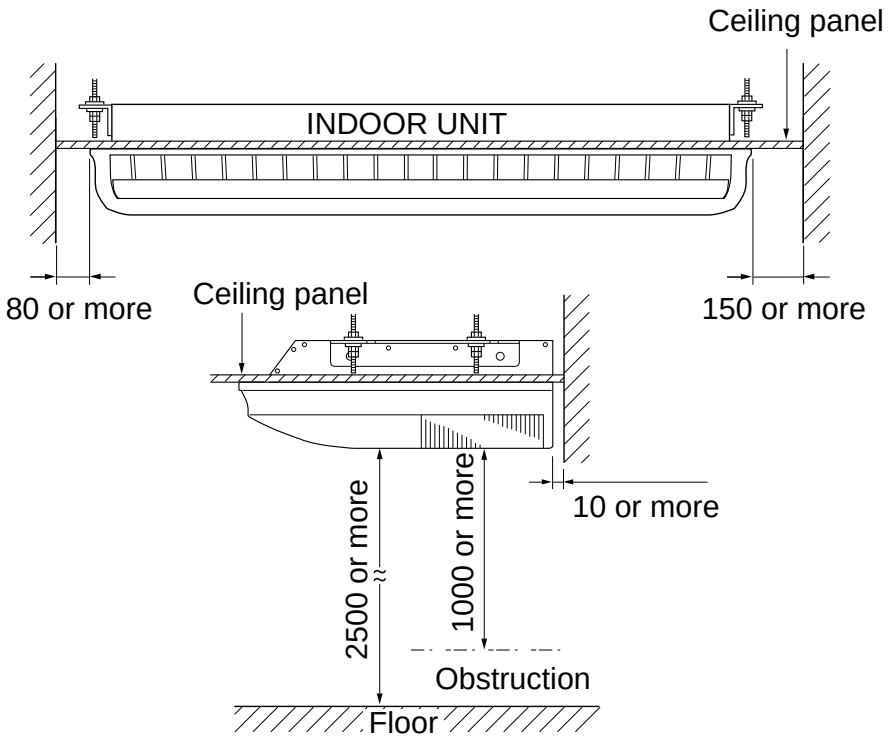
① Refrigerant piping flare connection (Gas)
② Refrigerant piping flare connection (Liquid)
③ Drain piping connection
④ Knock out hole for fresh air
⑤ Knock out hole for refrigerant piping
⑥ Hole for lifting bolt (Use M10 screw bolt)

INDOOR UNIT (SINGLE)

■ INSTALLATION PLACE

(Unit : mm)



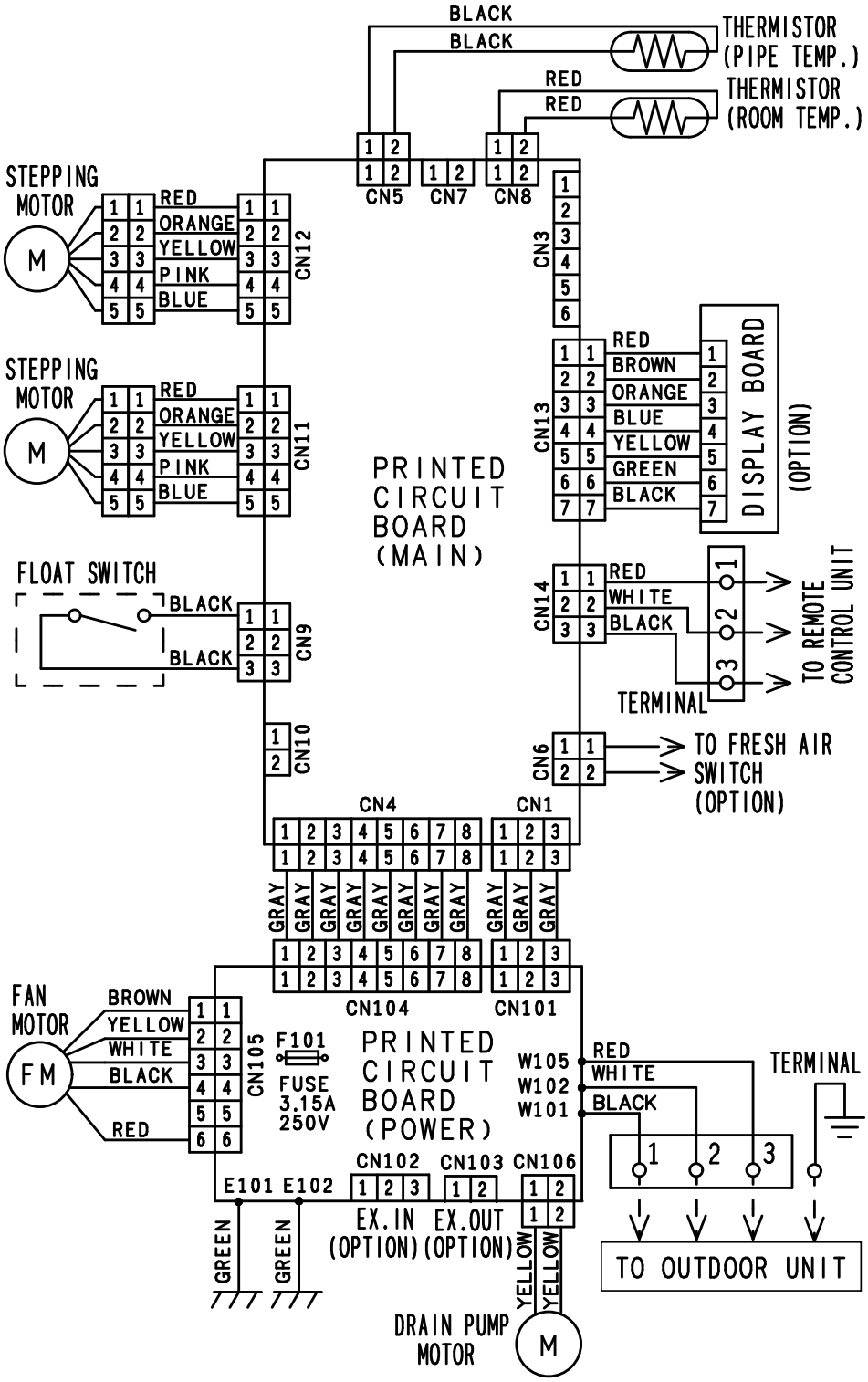


INDOOR UNIT (SINGLE)

5. WIRING DIAGRAMS

5-1. CASSETTE TYPE

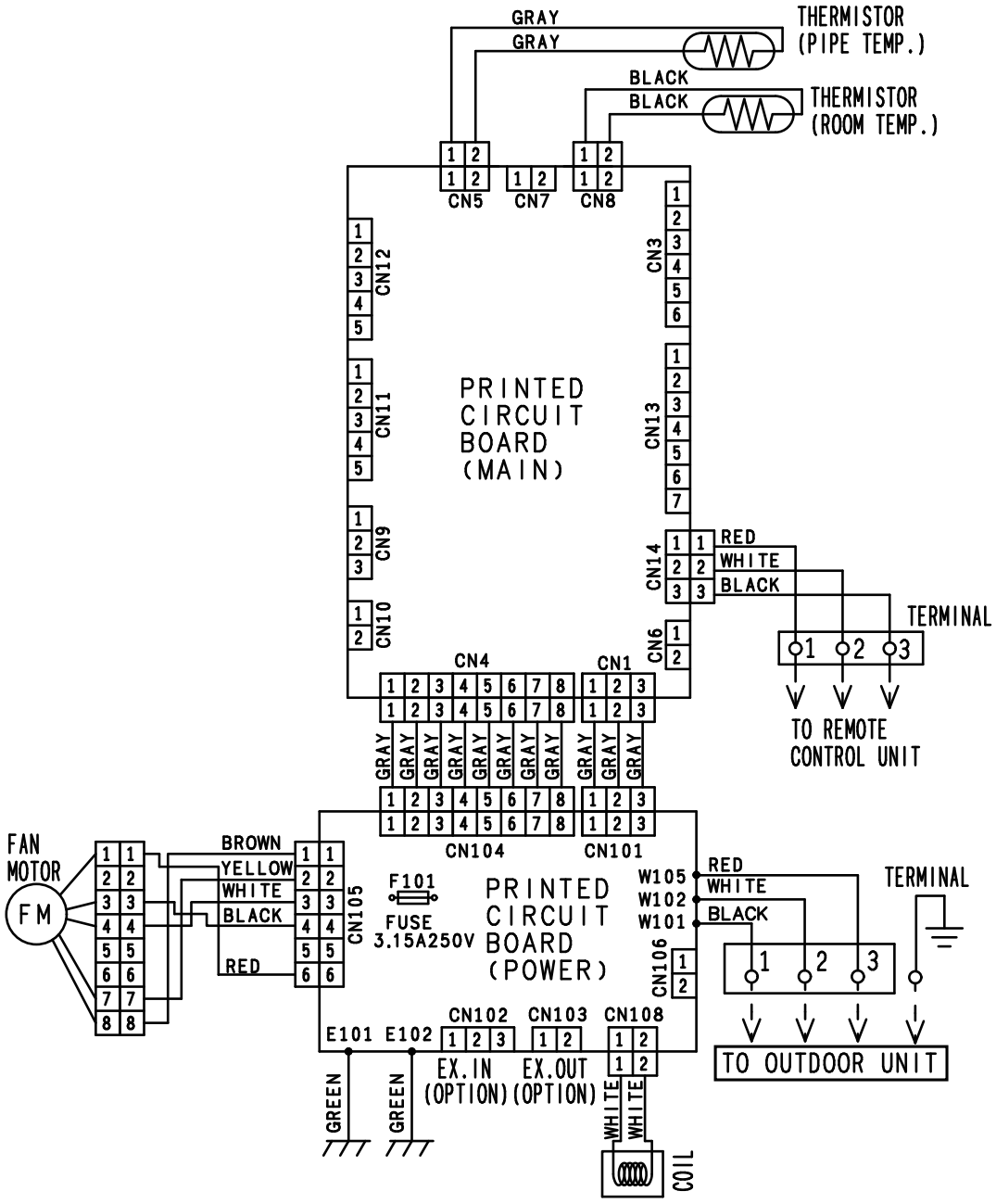
■ MODEL: AU∗G36LR, AU∗G45LR, AU∗G54LR



INDOOR UNIT (SINGLE)

5-2. DUCT TYPE

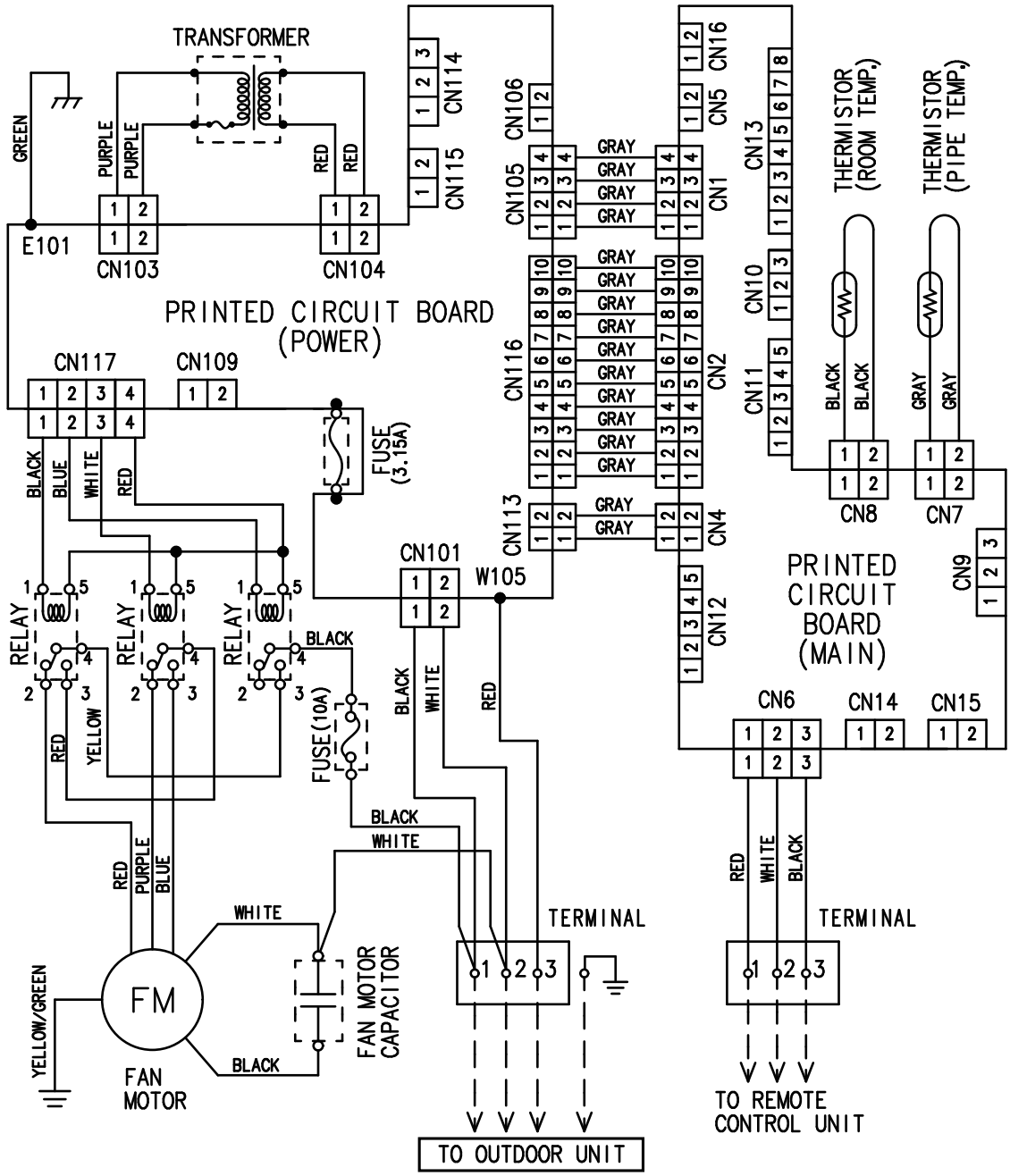
■ MODEL: AR∗G36LM, AR∗G45LM



INDOOR UNIT (SINGLE)

5-3. HIGH STATIC PRESSURE DUCT TYPE

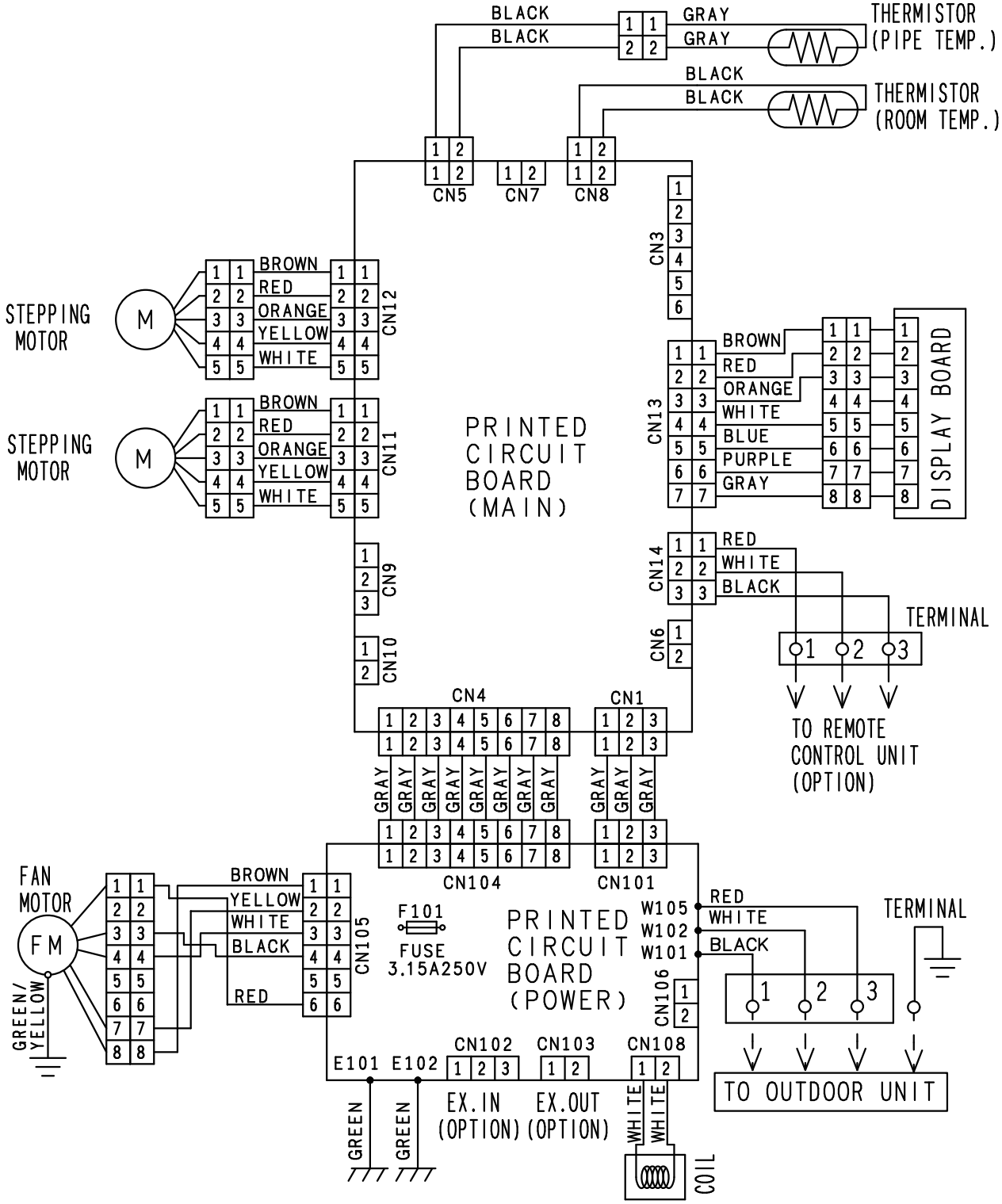
■ MODEL: AR∗G45LH, AR∗G54LH



INDOOR UNIT (SINGLE)

5-4. CEILING TYPE

■MODEL: AB∗G36LR, AB∗G45LR, AB∗G54LR



INDOOR UNIT (SINGLE)

6. CAPACITY TABLE

6-1. COOLING CAPACITY

6-1-1. CASSETTE TYPE

This table is created using the maximum capacity.

■ MODEL: AU∗G36LR

AFR	30.0

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	8.83	6.90	1.40	9.84	6.95	1.42	10.17	7.55	1.43	10.85	7.58	1.44	11.18	8.18	1.45	11.85	8.15	1.47	12.52	8.68	1.48
	-10	8.76	6.65	1.41	9.76	6.69	1.44	10.10	7.27	1.44	10.76	7.29	1.46	11.09	7.87	1.47	11.76	7.84	1.48	12.43	8.35	1.50
	0	8.68	6.61	1.49	9.67	6.65	1.51	10.00	7.23	1.52	10.66	7.25	1.54	10.99	7.83	1.55	11.65	7.80	1.56	12.31	8.31	1.58
	5	8.63	6.66	1.59	9.61	6.70	1.62	9.94	7.28	1.63	10.59	7.30	1.64	10.92	7.89	1.65	11.58	7.86	1.67	12.23	8.37	1.69
	10	8.59	6.74	1.72	9.57	6.78	1.74	9.90	7.38	1.75	10.55	7.40	1.77	10.88	7.99	1.78	11.53	7.96	1.80	12.18	8.48	1.81
	15	8.55	6.72	1.92	9.52	6.76	1.95	9.84	7.35	1.96	10.49	7.38	1.98	10.82	7.97	1.99	11.47	7.93	2.01	12.12	8.45	2.03
	20	8.77	6.43	2.36	9.77	6.47	2.40	10.10	7.03	2.41	10.77	7.05	2.43	11.10	7.62	2.45	11.77	7.59	2.47	12.44	8.08	2.49
	25	8.89	6.56	2.79	9.91	6.60	2.84	10.24	7.17	2.85	10.92	7.20	2.88	11.26	7.77	2.90	11.93	7.74	2.92	12.61	8.25	2.95
	30	9.17	6.69	3.32	10.22	6.73	3.37	10.57	7.32	3.38	11.26	7.34	3.42	11.61	7.93	3.44	12.31	7.90	3.47	13.00	8.41	3.50
	35	8.85	6.59	3.68	9.86	6.62	3.74	10.19	7.20	3.76	10.86	7.23	3.80	11.40	7.80	3.82	11.87	7.77	3.86	12.54	8.28	3.89
	40	8.01	6.20	3.80	8.93	6.24	3.86	9.23	6.78	3.88	9.84	6.80	3.92	10.14	7.35	3.94	10.75	7.32	3.98	11.36	7.79	4.02
	46	6.79	5.65	3.84	7.57	5.69	3.90	7.83	6.18	3.92	8.34	6.20	3.96	8.60	6.70	3.98	9.12	6.67	4.02	9.63	7.11	4.06

■ MODEL: AU∗G45LR

AFR	31.7

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	10.62	7.73	1.57	11.83	7.77	1.59	12.23	8.45	1.60	13.04	8.48	1.62	13.44	9.15	1.62	14.25	9.12	1.64	15.06	9.71	1.66
	-10	10.51	7.70	1.62	11.71	7.75	1.64	12.11	8.42	1.65	12.91	8.45	1.67	13.31	9.12	1.67	14.11	9.09	1.69	14.91	9.68	1.71
	0	10.42	7.58	1.71	11.60	7.62	1.73	12.00	8.29	1.74	12.79	8.32	1.76	13.19	8.98	1.77	13.98	8.94	1.79	14.77	9.53	1.81
	5	10.28	7.56	1.81	11.45	7.61	1.84	11.84	8.27	1.85	12.62	8.30	1.87	13.01	8.96	1.88	13.79	8.92	1.89	14.57	9.51	1.91
	10	10.17	7.59	1.92	11.33	7.64	1.95	11.72	8.30	1.96	12.49	8.33	1.98	12.88	8.99	1.99	13.65	8.96	2.01	14.42	9.54	2.03
	15	10.10	7.66	2.08	11.26	7.71	2.11	11.64	8.38	2.13	12.41	8.41	2.15	12.79	9.08	2.16	13.56	9.04	2.18	14.33	9.63	2.20
	20	10.38	7.46	2.40	11.56	7.51	2.43	11.96	8.16	2.45	12.75	8.19	2.47	13.14	8.84	2.48	13.93	8.81	2.51	14.72	9.38	2.53
	25	10.76	7.77	2.86	11.99	7.81	2.90	12.40	8.50	2.92	13.21	8.52	2.95	13.62	9.20	2.96	14.44	9.17	2.99	15.26	9.77	3.02
	30	11.30	7.83	4.29	12.59	7.87	4.36	13.02	8.56	4.38	13.88	8.59	4.43	14.31	9.27	4.45	15.17	9.24	4.49	16.02	9.84	4.54
	35	11.06	7.77	4.72	12.32	7.82	4.80	12.74	8.50	4.82	13.58	8.53	4.87	14.00	9.21	4.90	14.84	9.17	4.94	15.68	9.77	4.99
	40	10.16	7.33	4.87	11.32	7.38	4.94	11.70	8.02	4.97	12.48	8.05	5.02	12.86	8.69	5.04	13.63	8.65	5.09	14.40	9.22	5.14
	46	8.26	6.44	4.17	9.20	6.48	4.24	9.51	7.05	4.26	10.14	7.07	4.30	10.45	7.63	4.32	11.08	7.60	4.37	11.71	8.10	4.41

■ MODEL: AU∗G54LR

AFR	33.3

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	11.86	9.04	2.12	13.22	9.09	2.16	13.67	9.89	2.17	14.57	9.92	2.19	15.02	10.71	2.20	15.92	10.67	2.22	16.82	11.37	2.24
	-10	11.74	8.51	2.23	13.08	8.56	2.27	13.53	9.30	2.28	14.42	9.33	2.30	14.86	10.08	2.31	15.76	10.04	2.34	16.65	10.70	2.36
	0	11.68	8.38	2.30	13.01	8.43	2.34	13.45	9.16	2.35	14.34	9.19	2.37	14.78	9.92	2.39	15.67	9.88	2.41	16.55	10.53	2.43
	5	11.58	8.40	2.35	12.90	8.45	2.39	13.34	9.19	2.40	14.21	9.21	2.42	14.65	9.95	2.44	15.53	9.91	2.46	16.41	10.56	2.49
	10	11.47	8.44	2.42	12.78	8.49	2.46	13.21	9.22	2.48	14.08	9.25	2.50	14.52	9.99	2.51	15.39	9.95	2.54	16.26	10.60	2.56
	15	11.49	8.43	2.53	12.80	8.48	2.57	13.24	9.22	2.58	14.11	9.25	2.61	14.55	9.99	2.62	15.42	9.95	2.65	16.29	10.60	2.67
	20	11.90	8.47	2.96	13.26	8.52	3.01	13.71	9.26	3.02	14.61	9.29	3.05	15.06	10.04	3.07	15.97	10.00	3.10	16.87	10.65	3.13
	25	12.39	8.84	3.53	13.81	8.89	3.58	14.28	9.66	3.60	15.22	9.70	3.64	15.69	10.47	3.65	16.63	10.43	3.69	17.57	11.11	3.73
	30	12.77	8.89	4.93	14.23	8.94	5.01	14.71	9.72	5.03	15.68	9.75	5.09	16.17	10.53	5.11	17.14	10.49	5.16	18.11	11.18	5.21
	35	12.64	8.93	5.40	14.08	8.98	5.48	14.56	9.77	5.51	15.52	9.80	5.57	16.00	10.58	5.59	16.96	10.54	5.65	17.92	11.23	5.71
	40	11.62	8.43	5.54	12.94	8.48	5.63	13.38	9.22	5.66	14.26	9.25	5.71	14.70	9.99	5.74	15.59	9.95	5.80	16.47	10.60	5.86
	46	8.88	7.17	4.21	9.89	7.21	4.28	10.23	7.84	4.30	10.91	7.87	4.34	11.24	8.49	4.36	11.92	8.46	4.41	12.59	9.01	4.45

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
SHC: Sensible Heat Capacity (kW)
IP: Input Power (kW)

INDOOR UNIT (SINGLE)

6-1-2. DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G36LM

AFR	30.8

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
Outdoor temperature	-15	8.60	6.85	1.44	9.58	6.89	1.46	9.91	7.49	1.47	10.56	7.51	1.48	10.89	8.11	1.49	11.54	8.08	1.51	12.19	8.61	1.52
	-10	8.52	6.57	1.48	9.49	6.61	1.50	9.82	7.19	1.51	10.46	7.21	1.52	10.79	7.79	1.53	11.43	7.76	1.55	12.08	8.26	1.56
	0	8.47	6.56	1.57	9.43	6.60	1.60	9.76	7.18	1.61	10.40	7.20	1.62	10.72	7.78	1.63	11.36	7.74	1.65	12.01	8.25	1.66
	5	8.42	6.62	1.66	9.38	6.66	1.69	9.70	7.24	1.70	10.34	7.26	1.72	10.66	7.84	1.72	11.30	7.81	1.74	11.94	8.32	1.76
	10	8.39	6.72	1.77	9.35	6.76	1.80	9.67	7.35	1.81	10.31	7.37	1.83	10.62	7.96	1.84	11.26	7.93	1.85	11.90	8.45	1.87
	15	8.33	6.69	2.10	9.27	6.73	2.13	9.59	7.31	2.14	10.22	7.34	2.16	10.54	7.92	2.17	11.17	7.89	2.20	11.80	8.41	2.22
	20	8.51	6.34	2.50	9.48	6.38	2.54	9.80	6.94	2.56	10.44	6.96	2.58	10.77	7.51	2.59	11.41	7.48	2.62	12.06	7.97	2.65
	25	8.64	6.50	2.94	9.63	6.54	2.99	9.96	7.11	3.01	10.61	7.13	3.04	10.94	7.70	3.05	11.60	7.67	3.08	12.26	8.17	3.11
	30	8.97	6.66	3.43	10.00	6.70	3.48	10.34	7.29	3.50	11.02	7.31	3.54	11.36	7.89	3.55	12.04	7.86	3.59	12.72	8.37	3.62
	35	8.85	6.71	3.80	9.86	6.75	3.86	10.19	7.34	3.88	10.86	7.36	3.92	11.40	7.95	3.94	11.87	7.92	3.97	12.54	8.43	4.01
	40	8.00	6.25	4.00	8.91	6.28	4.06	9.21	6.83	4.08	9.82	6.85	4.12	10.12	7.40	4.15	10.73	7.37	4.19	11.34	7.85	4.23
	46	6.78	5.65	4.06	7.55	5.68	4.12	7.81	6.18	4.14	8.32	6.20	4.18	8.58	6.69	4.21	9.09	6.66	4.25	9.61	7.10	4.29

■ MODEL: AR∗G45LM

AFR	35.0

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
Outdoor temperature	-15	10.38	7.83	1.63	11.57	7.88	1.66	11.96	8.56	1.66	12.75	8.59	1.68	13.14	9.28	1.69	13.93	9.24	1.71	14.72	9.84	1.72
	-10	10.33	7.84	1.68	11.50	7.89	1.71	11.89	8.58	1.72	12.68	8.61	1.73	13.07	9.29	1.74	13.85	9.26	1.76	14.64	9.86	1.78
	0	10.21	7.71	1.78	11.38	7.75	1.81	11.77	8.43	1.82	12.54	8.46	1.84	12.93	9.13	1.85	13.71	9.09	1.86	14.48	9.69	1.88
	5	10.12	7.74	1.90	11.27	7.78	1.93	11.66	8.46	1.94	12.42	8.49	1.96	12.81	9.17	1.97	13.58	9.13	1.99	14.35	9.72	2.01
	10	9.97	7.74	2.00	11.10	7.79	2.03	11.48	8.46	2.04	12.24	8.49	2.07	12.61	9.17	2.08	13.37	9.13	2.10	14.13	9.73	2.12
	15	9.88	7.81	2.17	11.00	7.86	2.20	11.38	8.54	2.21	12.13	8.57	2.24	12.50	9.26	2.25	13.25	9.22	2.27	14.00	9.82	2.29
	20	10.13	7.54	2.50	11.29	7.58	2.54	11.67	8.25	2.55	12.44	8.27	2.58	12.83	8.93	2.59	13.60	8.90	2.62	14.37	9.48	2.64
	25	10.48	7.84	3.00	11.67	7.89	3.05	12.07	8.58	3.06	12.87	8.61	3.09	13.27	9.29	3.11	14.06	9.26	3.14	14.86	9.86	3.17
	30	11.07	7.88	4.53	12.33	7.92	4.60	12.75	8.61	4.62	13.59	8.64	4.67	14.01	9.33	4.69	14.85	9.29	4.74	15.69	9.90	4.79
	35	11.06	8.01	4.99	12.32	8.05	5.06	12.74	8.75	5.09	13.58	8.78	5.14	14.00	9.49	5.17	14.84	9.45	5.22	15.68	10.06	5.27
	40	10.14	7.53	5.16	11.30	7.57	5.24	11.69	8.23	5.26	12.46	8.26	5.32	12.84	8.92	5.34	13.61	8.88	5.40	14.38	9.46	5.45
	46	8.24	6.56	4.43	9.18	6.60	4.50	9.49	7.18	4.52	10.12	7.20	4.57	10.43	7.78	4.59	11.06	7.75	4.63	11.68	8.25	4.68

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
SHC: Sensible Heat Capacity (kW)
IP: Input Power (kW)

6-1-3. HIGH STATIC PRESSURE DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G45LH

AFR	55.8

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	10.61	9.69	1.69	11.82	9.75	1.72	12.22	10.60	1.73	13.02	10.64	1.75	13.43	11.49	1.76	14.23	11.44	1.77	15.04	12.19	1.79
	-10	10.54	9.75	1.75	11.74	9.80	1.78	12.14	10.66	1.79	12.94	10.69	1.81	13.34	11.55	1.81	14.15	11.50	1.83	14.95	12.25	1.85
	0	10.47	9.53	1.79	11.66	9.58	1.81	12.05	10.42	1.82	12.85	10.45	1.84	13.25	11.29	1.85	14.04	11.24	1.87	14.84	11.98	1.89
	5	10.35	9.61	1.96	11.53	9.67	1.99	11.92	10.51	2.00	12.71	10.55	2.02	13.10	11.39	2.03	13.89	11.34	2.05	14.68	12.08	2.07
	10	10.27	9.77	2.20	11.44	9.83	2.24	11.83	10.68	2.25	12.61	10.72	2.27	13.01	11.57	2.28	13.79	11.53	2.31	14.57	12.28	2.33
	15	10.14	9.90	2.55	11.29	9.96	2.59	11.67	10.83	2.60	12.44	10.86	2.62	12.83	11.73	2.64	13.60	11.68	2.66	14.37	12.45	2.69
	20	10.33	9.20	3.27	11.51	9.26	3.32	11.90	10.06	3.34	12.69	10.10	3.37	13.08	10.90	3.39	13.86	10.86	3.42	14.65	11.57	3.45
	25	10.78	9.66	3.69	12.01	9.72	3.75	12.42	10.57	3.77	13.24	10.60	3.81	13.65	11.45	3.82	14.47	11.40	3.86	15.29	12.15	3.90
	30	11.16	9.82	4.63	12.43	9.88	4.71	12.85	10.74	4.73	13.70	10.77	4.78	14.12	11.63	4.80	14.97	11.59	4.85	15.81	12.34	4.90
	35	11.06	10.05	5.04	12.32	10.11	5.12	12.74	10.99	5.15	13.58	11.02	5.20	14.00	11.90	5.22	14.84	11.86	5.28	15.68	12.63	5.33
	40	10.13	9.63	5.39	11.28	9.68	5.47	11.67	10.53	5.50	12.44	10.56	5.56	12.82	11.41	5.58	13.59	11.36	5.64	14.36	12.10	5.70
	46	8.23	8.58	5.26	9.17	8.63	5.34	9.48	9.38	5.37	10.10	9.41	5.42	10.42	10.16	5.45	11.04	10.12	5.51	11.67	10.78	5.56

■ MODEL: AR∗G54LH

AFR	55.8

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	12.23	10.71	2.30	13.62	10.78	2.33	14.09	11.72	2.34	15.02	11.76	2.37	15.48	12.69	2.38	16.41	12.64	2.40	17.34	13.47	2.43
	-10	12.09	10.71	2.41	13.47	10.77	2.44	13.93	11.71	2.46	14.85	11.75	2.48	15.30	12.69	2.49	16.22	12.64	2.52	17.14	13.46	2.54
	0	11.97	10.38	2.48	13.34	10.44	2.52	13.79	11.35	2.53	14.70	11.39	2.56	15.15	12.30	2.57	16.06	12.25	2.60	16.97	13.05	2.62
	5	11.89	10.51	2.54	13.24	10.57	2.58	13.69	11.49	2.60	14.59	11.53	2.62	15.05	12.45	2.64	15.95	12.40	2.66	16.85	13.21	2.69
	10	11.79	10.67	2.68	13.13	10.73	2.72	13.58	11.67	2.73	14.48	11.70	2.76	14.92	12.64	2.78	15.82	12.59	2.80	16.72	13.41	2.83
	15	11.74	10.56	2.94	13.08	10.62	2.99	13.53	11.55	3.00	14.42	11.59	3.03	14.86	12.51	3.05	15.76	12.46	3.08	16.65	13.28	3.11
	20	12.19	10.42	3.81	13.58	10.48	3.87	14.05	11.40	3.89	14.97	11.43	3.93	15.43	12.35	3.95	16.36	12.30	3.99	17.29	13.10	4.03
	25	12.55	10.74	4.38	13.98	10.80	4.45	14.45	11.75	4.47	15.41	11.78	4.52	15.88	12.73	4.54	16.84	12.67	4.59	17.79	13.50	4.63
	30	12.75	10.78	5.28	14.20	10.84	5.36	14.69	11.79	5.39	15.66	11.83	5.44	16.14	12.77	5.47	17.11	12.72	5.52	18.08	13.55	5.58
	35	12.64	11.00	5.78	14.08	11.07	5.87	14.56	12.03	5.89	15.52	12.07	5.95	16.00	13.04	5.98	16.96	12.98	6.04	17.92	13.83	6.10
	40	11.59	10.51	6.10	12.91	10.58	6.19	13.35	11.50	6.23	14.23	11.54	6.29	14.67	12.46	6.32	15.55	12.41	6.38	16.43	13.22	6.45
	46	8.86	9.08	5.21	9.87	9.14	5.29	10.20	9.93	5.32	10.88	9.96	5.37	11.21	10.76	5.40	11.89	10.72	5.45	12.56	11.42	5.51

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
SHC: Sensible Heat Capacity (kW)
IP: Input Power (kW)

INDOOR UNIT (SINGLE)

6-1-4. CEILING TYPE

This table is created using the maximum capacity.

■ MODEL: AB∗G36LR

AFR	31.7

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	8.61	6.98	1.41	9.59	7.02	1.43	9.92	7.63	1.44	10.57	7.65	1.45	10.90	8.27	1.46	11.55	8.23	1.47	12.21	8.77	1.49
	-10	8.58	6.78	1.45	9.56	6.82	1.47	9.89	7.41	1.48	10.54	7.44	1.50	10.86	8.03	1.50	11.52	8.00	1.52	12.17	8.52	1.53
	0	8.55	6.75	1.54	9.52	6.79	1.57	9.85	7.38	1.57	10.49	7.40	1.59	10.82	7.99	1.60	11.47	7.96	1.61	12.12	8.48	1.63
	5	8.46	6.78	1.64	9.43	6.82	1.66	9.75	7.42	1.67	10.39	7.44	1.69	10.72	8.03	1.70	11.36	8.00	1.71	12.00	8.52	1.73
	10	8.44	6.88	1.73	9.40	6.92	1.76	9.72	7.52	1.77	10.36	7.55	1.79	10.68	8.15	1.80	11.32	8.12	1.81	11.96	8.65	1.83
	15	8.39	6.88	2.04	9.35	6.92	2.07	9.67	7.53	2.08	10.31	7.55	2.10	10.63	8.15	2.11	11.26	8.12	2.13	11.90	8.65	2.15
	20	8.53	6.48	2.44	9.50	6.52	2.48	9.83	7.09	2.49	10.47	7.11	2.51	10.80	7.68	2.53	11.45	7.65	2.55	12.09	8.15	2.58
	25	8.68	6.67	2.88	9.67	6.71	2.92	10.00	7.29	2.94	10.66	7.31	2.97	10.99	7.90	2.98	11.65	7.87	3.01	12.31	8.38	3.04
	30	8.98	6.80	3.36	10.01	6.85	3.41	10.35	7.44	3.43	11.03	7.47	3.47	11.37	8.06	3.48	12.05	8.03	3.52	12.74	8.55	3.55
	35	8.85	6.85	3.74	9.86	6.89	3.79	10.19	7.50	3.81	10.86	7.52	3.85	11.40	8.12	3.87	11.87	8.09	3.91	12.54	8.62	3.95
	40	8.01	6.47	3.84	8.92	6.51	3.90	9.22	7.07	3.92	9.83	7.10	3.96	10.13	7.66	3.98	10.74	7.63	4.02	11.35	8.13	4.06
	46	6.79	5.88	3.88	7.56	5.92	3.94	7.82	6.43	3.96	8.33	6.45	4.00	8.59	6.97	4.02	9.10	6.94	4.06	9.62	7.39	4.10

■ MODEL: AB∗G45LR

AFR	35.0

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	10.48	7.89	1.55	11.67	7.94	1.57	12.07	8.63	1.58	12.87	8.66	1.60	13.26	9.35	1.61	14.06	9.32	1.62	14.86	9.92	1.64
	-10	10.38	7.90	1.61	11.57	7.94	1.64	11.96	8.64	1.65	12.75	8.66	1.66	13.14	9.36	1.67	13.93	9.32	1.69	14.72	9.93	1.70
	0	10.28	7.82	1.70	11.45	7.86	1.72	11.84	8.55	1.73	12.62	8.58	1.75	13.01	9.26	1.76	13.79	9.22	1.78	14.57	9.83	1.79
	5	10.19	7.85	1.81	11.35	7.90	1.84	11.73	8.59	1.85	12.51	8.61	1.87	12.89	9.30	1.88	13.67	9.27	1.90	14.44	9.87	1.92
	10	10.00	7.83	1.92	11.14	7.88	1.95	11.52	8.56	1.96	12.28	8.59	1.98	12.66	9.28	1.99	13.42	9.24	2.01	14.18	9.84	2.03
	15	9.95	7.93	2.08	11.08	7.98	2.11	11.46	8.68	2.12	12.22	8.71	2.14	12.59	9.40	2.15	13.35	9.36	2.18	14.11	9.97	2.20
	20	10.23	7.70	2.40	11.40	7.75	2.43	11.79	8.42	2.45	12.56	8.45	2.47	12.95	9.13	2.48	13.73	9.09	2.51	14.50	9.68	2.53
	25	10.63	8.07	2.86	11.84	8.12	2.90	12.24	8.83	2.92	13.05	8.85	2.95	13.45	9.56	2.96	14.26	9.52	2.99	15.07	10.15	3.02
	30	11.19	8.07	4.31	12.46	8.11	4.38	12.88	8.82	4.40	13.73	8.85	4.45	14.16	9.56	4.47	15.01	9.52	4.51	15.86	10.14	4.56
	35	11.06	8.18	4.75	12.32	8.23	4.82	12.74	8.95	4.85	13.58	8.98	4.90	14.00	9.69	4.92	14.84	9.66	4.97	15.68	10.29	5.02
	40	10.15	7.70	4.91	11.31	7.74	4.99	11.69	8.42	5.01	12.46	8.45	5.07	12.85	9.12	5.09	13.62	9.09	5.14	14.39	9.68	5.19
	46	8.25	6.82	4.21	9.19	6.86	4.28	9.50	7.45	4.30	10.13	7.48	4.34	10.44	8.08	4.36	11.07	8.04	4.41	11.69	8.57	4.45

■ MODEL: AB∗G54LR

AFR	38.3

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	11.86	8.92	2.17	13.21	8.97	2.21	13.66	9.76	2.22	14.56	9.79	2.24	15.01	10.57	2.25	15.91	10.53	2.27	16.81	11.21	2.30
	-10	11.73	8.89	2.28	13.07	8.95	2.31	13.52	9.73	2.32	14.41	9.76	2.35	14.85	10.54	2.36	15.74	10.49	2.38	16.64	11.18	2.41
	0	11.67	8.76	2.35	13.00	8.81	2.39	13.45	9.58	2.40	14.33	9.61	2.43	14.77	10.37	2.44	15.66	10.33	2.46	16.55	11.01	2.49
	5	11.49	8.74	2.42	12.80	8.79	2.46	13.24	9.55	2.47	14.11	9.59	2.50	14.55	10.35	2.51	15.42	10.31	2.54	16.30	10.98	2.56
	10	11.42	8.81	2.49	12.72	8.87	2.53	13.15	9.64	2.54	14.02	9.67	2.57	14.45	10.44	2.58	15.32	10.40	2.61	16.18	11.08	2.63
	15	11.46	8.85	2.60	12.76	8.90	2.64	13.20	9.67	2.66	14.07	9.71	2.68	14.50	10.48	2.70	15.37	10.44	2.72	16.24	11.12	2.75
	20	11.78	8.76	3.06	13.12	8.82	3.11	13.57	9.59	3.13	14.46	9.62	3.16	14.91	10.38	3.17	15.80	10.34	3.21	16.70	11.02	3.24
	25	12.35	9.24	3.62	13.76	9.29	3.67	14.23	10.10	3.69	15.17	10.14	3.73	15.63	10.95	3.75	16.57	10.90	3.79	17.51	11.61	3.82
	30	12.77	9.26	5.15	14.22	9.31	5.23	14.71	10.12	5.25	15.68	10.16	5.31	16.16	10.97	5.33	17.13	10.92	5.39	18.10	11.64	5.44
	35	12.64	9.34	5.51	14.08	9.39	5.60	14.56	10.21	5.63	15.52	10.25	5.69	16.00	11.07	5.71	16.96	11.02	5.77	17.92	11.74	5.83
	40	11.60	8.83	5.68	12.92	8.88	5.76	13.36	9.65	5.79	14.25	9.69	5.85	14.69	10.46	5.88	15.57	10.42	5.94	16.45	11.10	6.00
	46	8.87	7.57	4.28	9.88	7.61	4.35	10.22	8.28	4.37	10.89	8.30	4.42	11.23	8.97	4.44	11.90	8.93	4.48	12.57	9.51	4.53

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
SHC: Sensible Heat Capacity (kW)
IP: Input Power (kW)

6-2. HEATING CAPACITY

6-2-1. CASSETTE TYPE

This table is created using the maximum capacity.

■ MODEL: AU∗G36LR

AFR	30.0

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	10.74	4.26	10.48	4.35	10.23	4.44	9.97	4.53	9.71	4.61
	-10	-11	11.90	4.26	11.62	4.35	11.34	4.44	11.05	4.52	10.77	4.61
	-5	-7	13.02	4.26	12.71	4.35	12.40	4.44	12.09	4.53	11.78	4.62
	0	-2	14.02	4.27	13.69	4.36	13.35	4.44	13.02	4.53	12.68	4.62
	5	3	14.46	4.26	14.11	4.35	13.77	4.44	13.43	4.53	13.08	4.62
	7	6	14.70	4.27	14.35	4.36	14.00	4.44	13.65	4.53	13.30	4.62
	10	8	15.03	4.24	14.67	4.33	14.31	4.42	13.96	4.51	13.60	4.59
	15	10	15.30	4.20	14.94	4.29	14.57	4.38	14.21	4.47	13.84	4.53
	20	15	16.10	4.15	15.72	4.24	15.33	4.33	14.95	4.41	14.57	4.48
	24	18	16.60	4.12	16.21	4.21	15.81	4.29	15.42	4.38	15.02	4.45

■ MODEL: AU∗G45LR

AFR	31.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	12.01	5.02	11.72	5.12	11.44	5.23	11.15	5.33	10.87	5.44
	-10	-11	13.46	5.02	13.14	5.12	12.82	5.22	12.50	5.33	12.18	5.43
	-5	-7	14.47	5.01	14.13	5.11	13.78	5.22	13.44	5.32	13.10	5.43
	0	-2	15.53	5.01	15.16	5.12	14.79	5.22	14.42	5.32	14.05	5.43
	5	3	16.53	5.02	16.14	5.12	15.74	5.22	15.35	5.33	14.96	5.43
	7	6	17.01	5.02	16.61	5.12	16.20	5.23	15.80	5.33	15.39	5.43
	10	8	17.42	5.00	17.00	5.10	16.59	5.21	16.17	5.31	15.76	5.42
	15	10	17.76	4.97	17.34	5.08	16.91	5.18	16.49	5.28	16.07	5.36
	20	15	18.73	4.93	18.29	5.04	17.84	5.14	17.40	5.24	16.95	5.32
	24	18	19.09	4.89	18.63	4.99	18.18	5.10	17.73	5.20	17.27	5.28

■ MODEL: AU∗G54LR

AFR	33.3

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	12.40	5.61	12.10	5.73	11.81	5.85	11.51	5.96	11.22	6.08
	-10	-11	14.02	5.62	13.69	5.73	13.36	5.85	13.02	5.97	12.69	6.08
	-5	-7	15.78	5.61	15.40	5.73	15.02	5.85	14.65	5.96	14.27	6.08
	0	-2	16.97	5.62	16.57	5.73	16.17	5.85	15.76	5.97	15.36	6.08
	5	3	18.32	5.63	17.88	5.74	17.44	5.86	17.01	5.98	16.57	6.10
	7	6	18.90	5.63	18.45	5.75	18.00	5.86	17.55	5.98	17.10	6.10
	10	8	19.38	5.61	18.92	5.72	18.46	5.84	17.99	5.96	17.53	6.08
	15	10	19.84	5.56	19.36	5.68	18.89	5.79	18.42	5.91	17.95	6.00
	20	15	20.79	5.46	20.30	5.57	19.80	5.69	19.31	5.80	18.81	5.89
	24	18	21.22	5.40	20.71	5.52	20.20	5.63	19.70	5.74	19.19	5.83

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNIT (SINGLE)

6-2-2. DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G36LM

AFR	30.8

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	10.72	4.41	10.47	4.50	10.21	4.59	9.95	4.68	9.70	4.78
	-10	-11	11.89	4.41	11.60	4.50	11.32	4.59	11.04	4.68	10.75	4.78
	-5	-7	13.00	4.40	12.69	4.49	12.38	4.59	12.07	4.68	11.76	4.77
	0	-2	14.00	4.41	13.67	4.50	13.33	4.59	13.00	4.68	12.67	4.78
	5	3	14.44	4.41	14.10	4.50	13.75	4.59	13.41	4.68	13.07	4.78
	7	6	14.70	4.41	14.35	4.50	14.00	4.59	13.65	4.68	13.30	4.77
	10	8	15.00	4.39	14.64	4.48	14.29	4.57	13.93	4.67	13.57	4.76
	15	10	15.28	4.34	14.91	4.43	14.55	4.52	14.18	4.61	13.82	4.68
	20	15	16.08	4.24	15.69	4.33	15.31	4.42	14.93	4.50	14.55	4.57
	24	18	16.58	4.18	16.19	4.26	15.79	4.35	15.40	4.44	15.00	4.51

■ MODEL: AR∗G45LM

AFR	35.0

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	11.91	5.13	11.62	5.23	11.34	5.34	11.06	5.45	10.77	5.55
	-10	-11	13.37	5.13	13.05	5.24	12.74	5.34	12.42	5.45	12.10	5.56
	-5	-7	14.45	5.13	14.10	5.24	13.76	5.34	13.41	5.45	13.07	5.56
	0	-2	15.51	5.13	15.14	5.24	14.77	5.34	14.40	5.45	14.03	5.56
	5	3	16.50	5.14	16.11	5.24	15.72	5.35	15.32	5.46	14.93	5.56
	7	6	17.01	5.13	16.61	5.24	16.20	5.35	15.80	5.45	15.39	5.56
	10	8	17.40	5.14	16.98	5.25	16.57	5.35	16.15	5.46	15.74	5.57
	15	10	17.74	5.14	17.31	5.24	16.89	5.35	16.47	5.46	16.05	5.54
	20	15	18.71	5.05	18.26	5.16	17.82	5.26	17.37	5.37	16.92	5.45
	24	18	19.07	4.95	18.62	5.06	18.16	5.16	17.71	5.26	17.26	5.34

AFR: Air Flow Rate (m^3/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNIT (SINGLE)

6-2-3. HIGH STATIC PRESSURE DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G45LH

AFR	55.8

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	12.39	5.20	12.09	5.31	11.80	5.42	11.50	5.52	11.21	5.63
	-10	-11	13.58	5.20	13.26	5.31	12.93	5.42	12.61	5.53	12.29	5.63
	-5	-7	14.46	5.21	14.12	5.32	13.77	5.43	13.43	5.53	13.09	5.64
	0	-2	15.52	5.21	15.15	5.32	14.78	5.43	14.41	5.54	14.04	5.65
	5	3	16.51	5.22	16.12	5.33	15.73	5.44	15.34	5.55	14.94	5.66
	7	6	17.01	5.22	16.61	5.33	16.20	5.44	15.80	5.54	15.39	5.65
	10	8	17.40	5.22	16.99	5.33	16.58	5.44	16.16	5.54	15.75	5.65
	15	10	17.74	5.16	17.32	5.27	16.90	5.38	16.48	5.48	16.05	5.56
	20	15	18.75	5.08	18.30	5.19	17.85	5.29	17.41	5.40	16.96	5.48
	24	18	19.08	5.02	18.62	5.12	18.17	5.23	17.72	5.33	17.26	5.42

■ MODEL: AR∗G54LH

AFR	55.8

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	12.79	5.68	12.49	5.80	12.18	5.92	11.88	6.04	11.57	6.16
	-10	-11	14.22	5.68	13.88	5.80	13.54	5.92	13.20	6.04	12.86	6.15
	-5	-7	15.76	5.68	15.38	5.80	15.01	5.92	14.63	6.04	14.26	6.16
	0	-2	16.97	5.68	16.56	5.80	16.16	5.92	15.75	6.04	15.35	6.15
	5	3	18.29	5.68	17.85	5.80	17.42	5.92	16.98	6.04	16.54	6.16
	7	6	18.90	5.68	18.45	5.80	18.00	5.92	17.55	6.04	17.10	6.16
	10	8	19.36	5.66	18.90	5.78	18.44	5.90	17.98	6.01	17.51	6.13
	15	10	19.82	5.60	19.35	5.72	18.87	5.83	18.40	5.95	17.93	6.04
	20	15	20.78	5.51	20.29	5.62	19.79	5.74	19.30	5.85	18.80	5.94
	24	18	21.19	5.45	20.69	5.56	20.18	5.67	19.68	5.79	19.17	5.88

AFR: Air Flow Rate (m^3/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNIT (SINGLE)

6-2-4. CEILING TYPE

This table is created using the maximum capacity.

■ MODEL: AB∗G36LR

AFR	31.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	10.71	4.43	10.45	4.52	10.20	4.62	9.94	4.71	9.69	4.80
	-10	-11	11.87	4.43	11.59	4.52	11.31	4.61	11.02	4.71	10.74	4.80
	-5	-7	12.99	4.43	12.68	4.52	12.37	4.61	12.06	4.70	11.75	4.79
	0	-2	13.99	4.43	13.66	4.52	13.32	4.62	12.99	4.71	12.66	4.80
	5	3	14.43	4.43	14.08	4.52	13.74	4.61	13.40	4.70	13.05	4.80
	7	6	14.70	4.44	14.35	4.53	14.00	4.62	13.65	4.71	13.30	4.81
	10	8	14.99	4.43	14.64	4.52	14.28	4.61	13.92	4.71	13.56	4.80
	15	10	15.26	4.37	14.89	4.46	14.53	4.56	14.17	4.65	13.80	4.72
	20	15	16.06	4.26	15.68	4.35	15.30	4.43	14.91	4.52	14.53	4.59
	24	18	16.57	4.20	16.17	4.28	15.78	4.37	15.39	4.46	14.99	4.53

■ MODEL: AB∗G45LR

AFR	35.0

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	11.89	5.14	11.61	5.25	11.33	5.35	11.04	5.46	10.76	5.57
	-10	-11	13.37	5.15	13.05	5.26	12.73	5.37	12.41	5.47	12.10	5.58
	-5	-7	14.43	5.15	14.09	5.25	13.75	5.36	13.40	5.47	13.06	5.57
	0	-2	15.49	5.14	15.12	5.25	14.76	5.36	14.39	5.46	14.02	5.57
	5	3	16.49	5.15	16.10	5.26	15.71	5.36	15.31	5.47	14.92	5.58
	7	6	17.01	5.15	16.61	5.26	16.20	5.36	15.80	5.47	15.39	5.58
	10	8	17.39	5.16	16.97	5.26	16.56	5.37	16.14	5.48	15.73	5.58
	15	10	17.72	5.15	17.30	5.26	16.88	5.36	16.45	5.47	16.03	5.55
	20	15	18.70	5.07	18.25	5.17	17.81	5.28	17.36	5.38	16.92	5.46
	24	18	19.06	4.97	18.60	5.07	18.15	5.18	17.70	5.28	17.24	5.36

■ MODEL: AB∗G54LR

AFR	38.3

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	12.37	5.65	12.07	5.76	11.78	5.88	11.49	6.00	11.19	6.12
	-10	-11	14.00	5.65	13.66	5.76	13.33	5.88	13.00	6.00	12.66	6.12
	-5	-7	15.74	5.64	15.37	5.76	14.99	5.88	14.62	6.00	14.24	6.11
	0	-2	16.94	5.65	16.54	5.76	16.14	5.88	15.73	6.00	15.33	6.12
	5	3	18.28	5.64	17.84	5.76	17.41	5.88	16.97	5.99	16.54	6.11
	7	6	18.90	5.65	18.45	5.76	18.00	5.88	17.55	6.00	17.10	6.12
	10	8	19.36	5.65	18.90	5.76	18.43	5.88	17.97	6.00	17.51	6.12
	15	10	19.80	5.59	19.33	5.70	18.86	5.82	18.39	5.93	17.92	6.02
	20	15	20.76	5.49	20.27	5.61	19.77	5.72	19.28	5.84	18.79	5.92
	24	18	21.18	5.35	20.67	5.46	20.17	5.57	19.66	5.68	19.16	5.77

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNIT (SINGLE)

7. FAN PERFORMANCE (AND CAPACITY*)

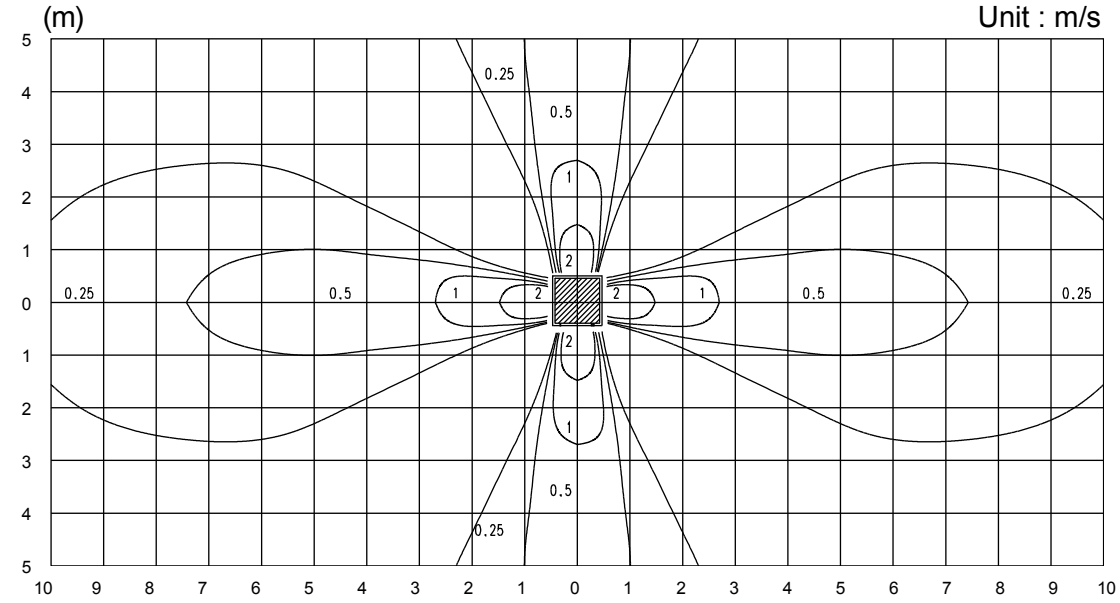
7-1. CASSETTE TYPE

7-1-1. AIR VELOCITY DISTRIBUTION

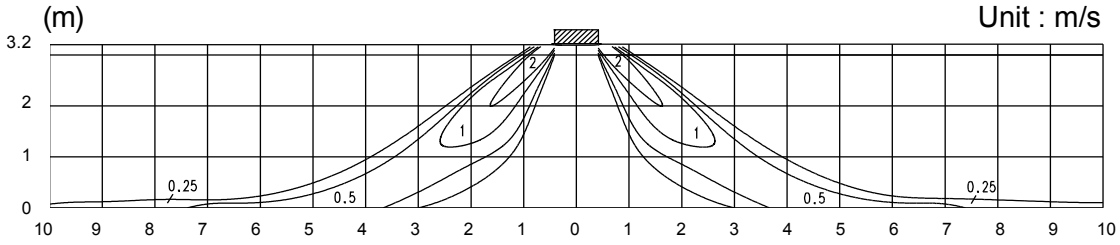
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■ MODEL: AU∗G36LR (STANDARD MODE)

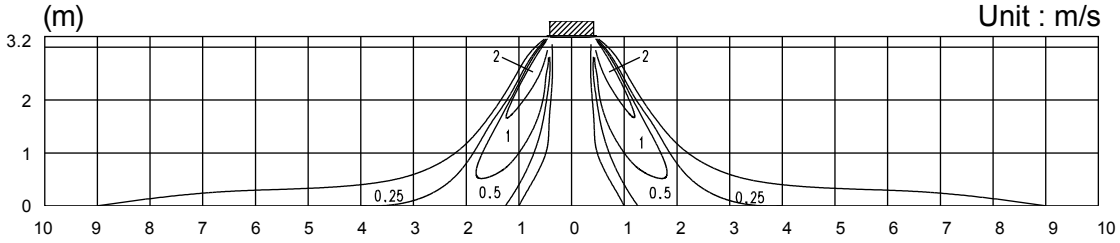
● 4-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



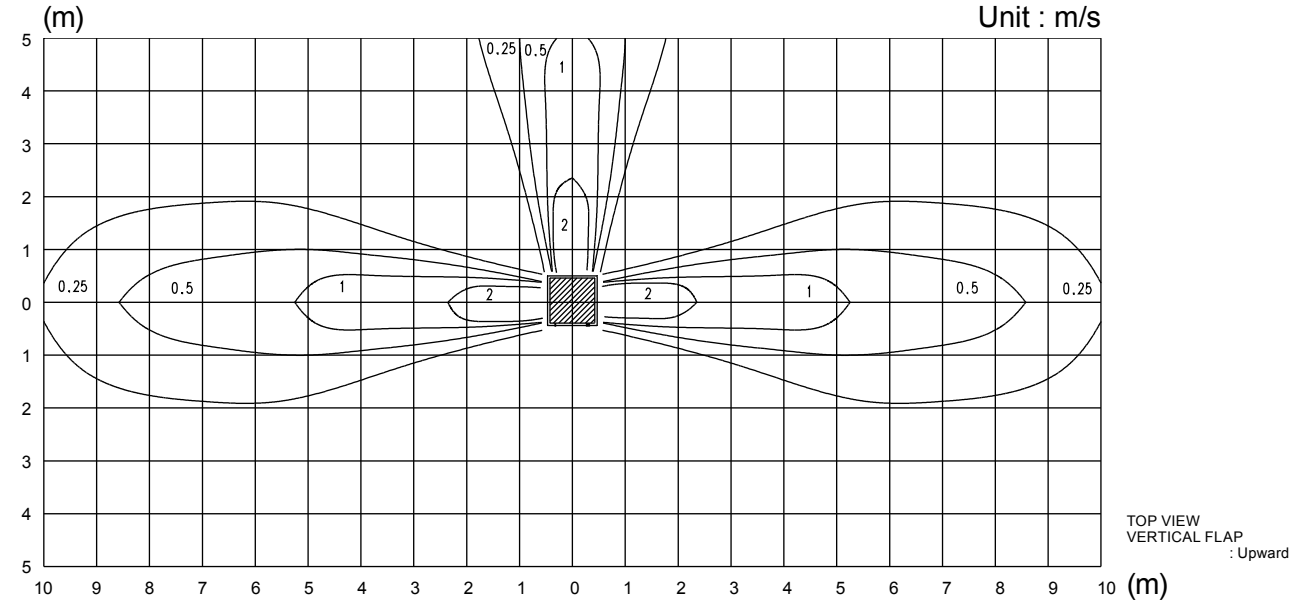
SIDE VIEW
VERTICAL FLAP
: Downward

*For Duct type only

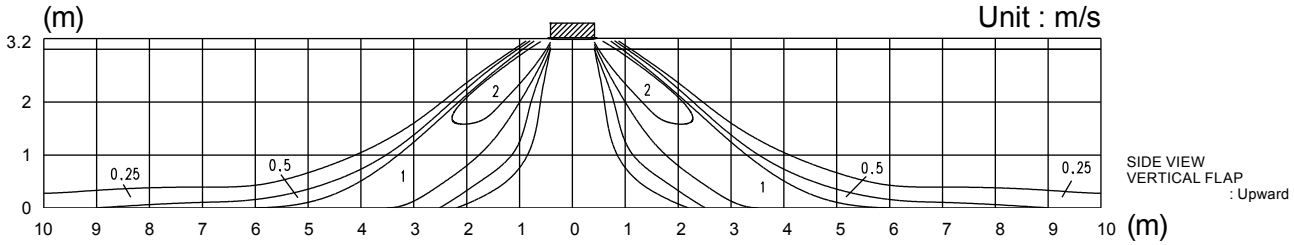
INDOOR UNIT (SINGLE)

Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

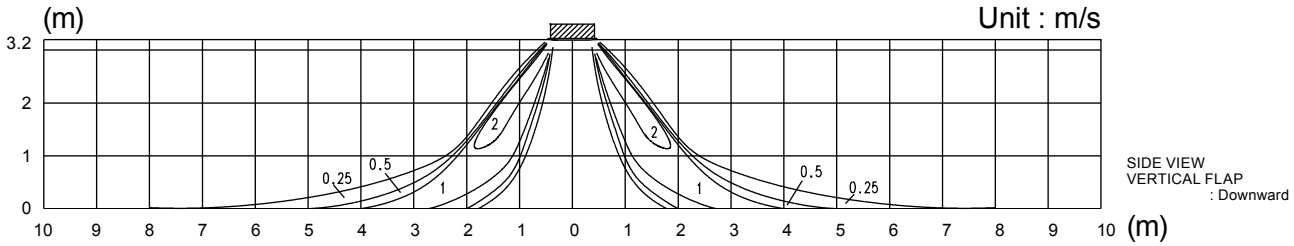
● 3-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



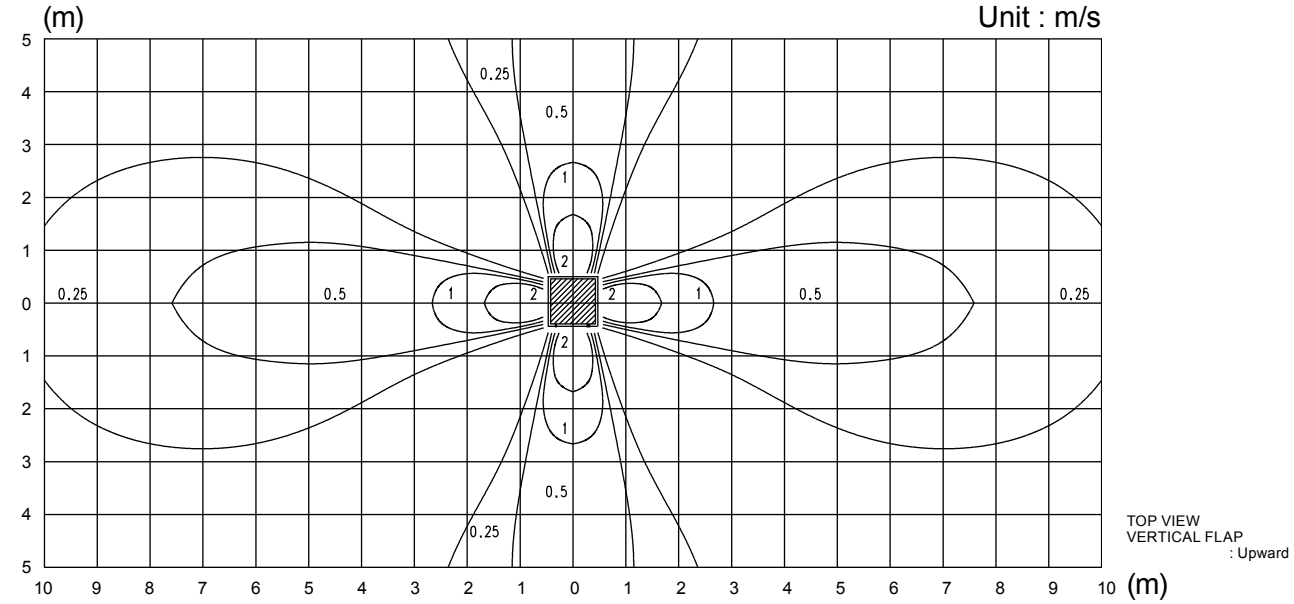
SIDE VIEW
VERTICAL FLAP
: Downward

INDOOR UNIT (SINGLE)

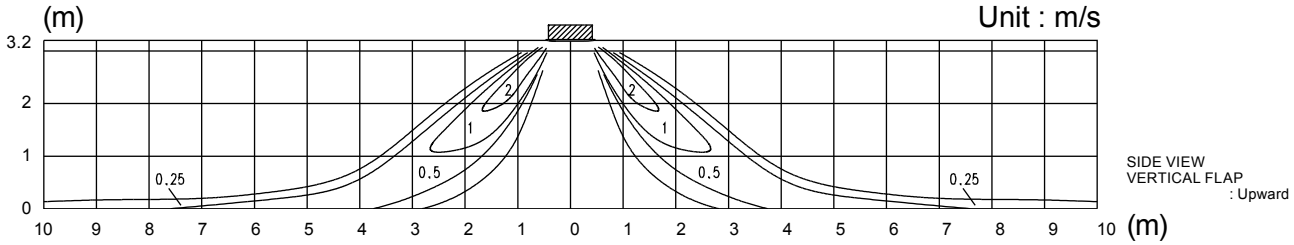
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■ MODEL: AU∗G45LR (STANDARD MODE)

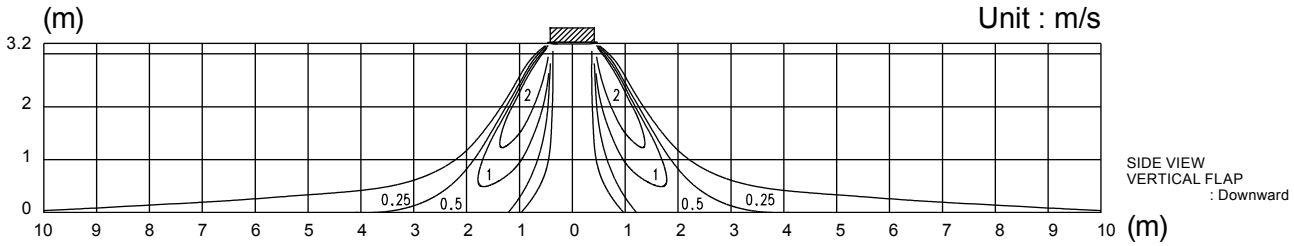
● 4-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward

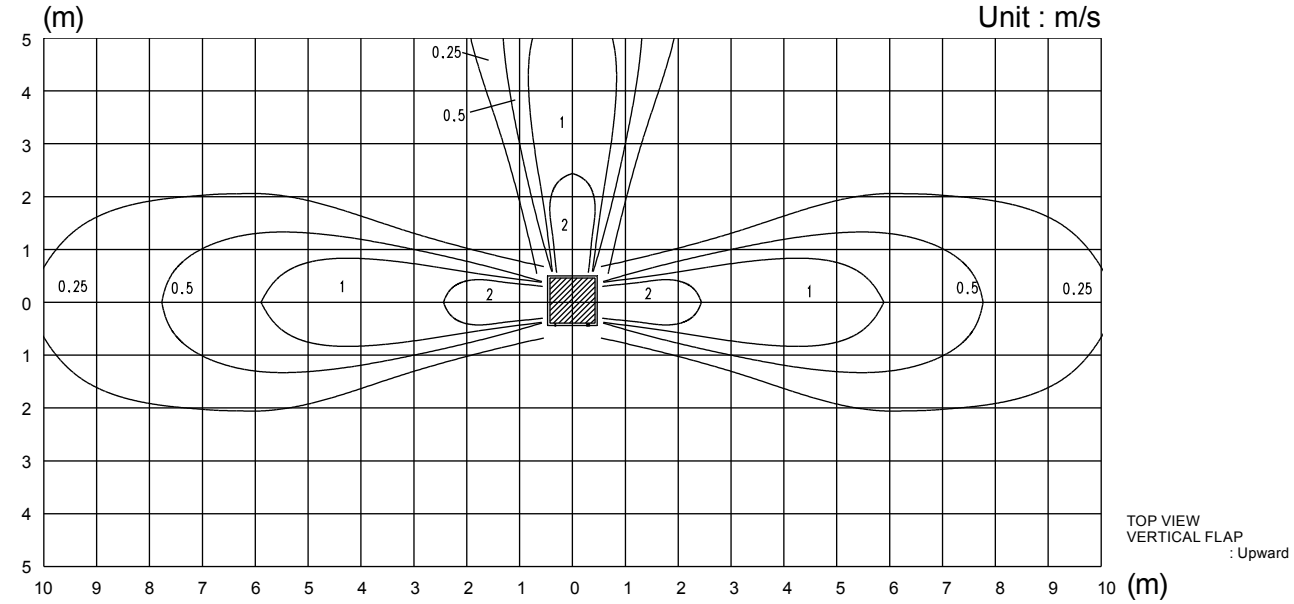


SIDE VIEW
VERTICAL FLAP
: Downward

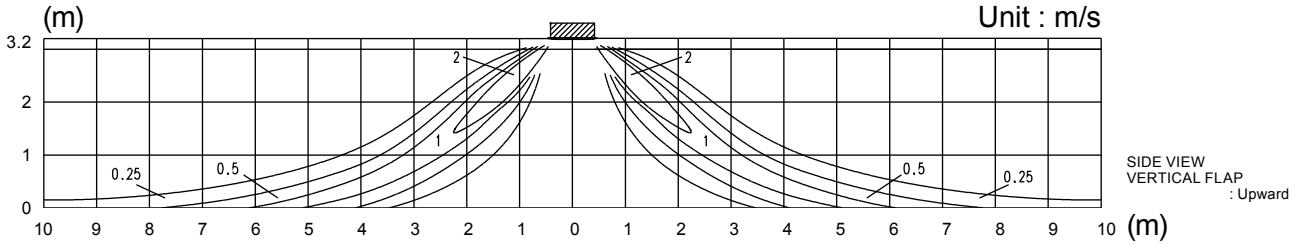
INDOOR UNIT (SINGLE)

Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

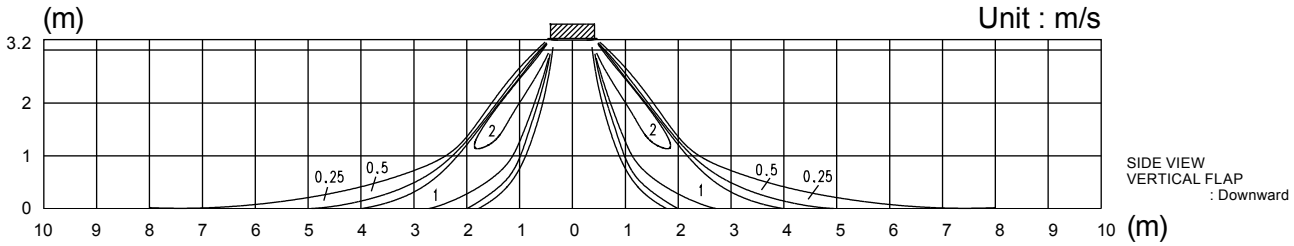
● 3-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



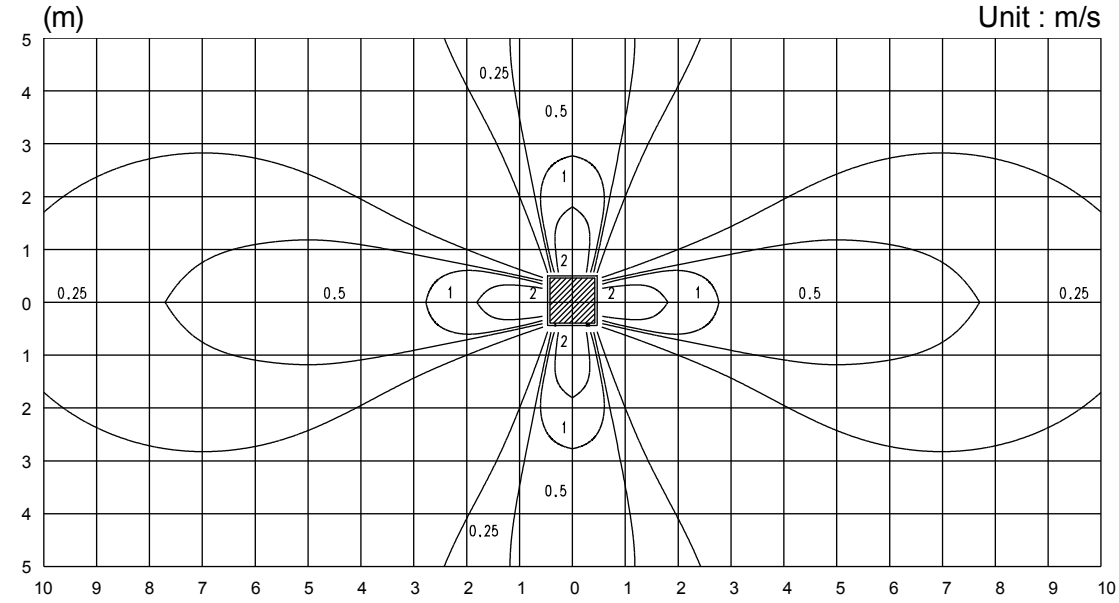
SIDE VIEW
VERTICAL FLAP
: Downward

INDOOR UNIT (SINGLE)

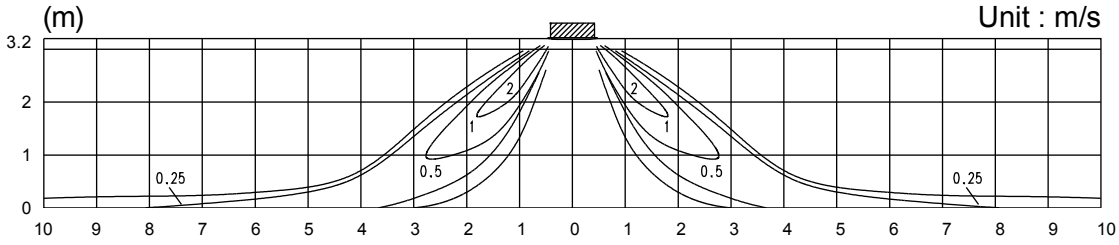
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■MODEL: AU∗G54LR (STANDARD MODE)

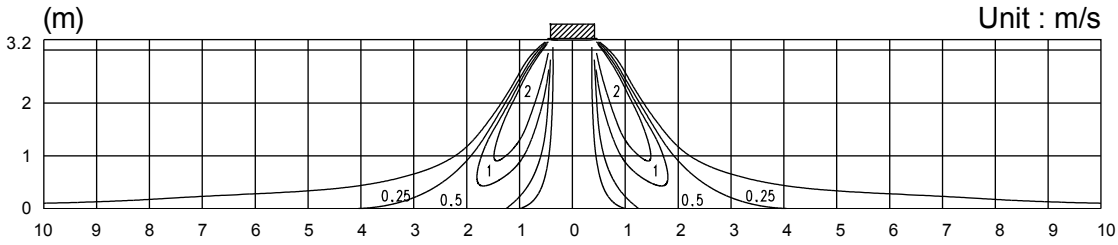
●4-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward

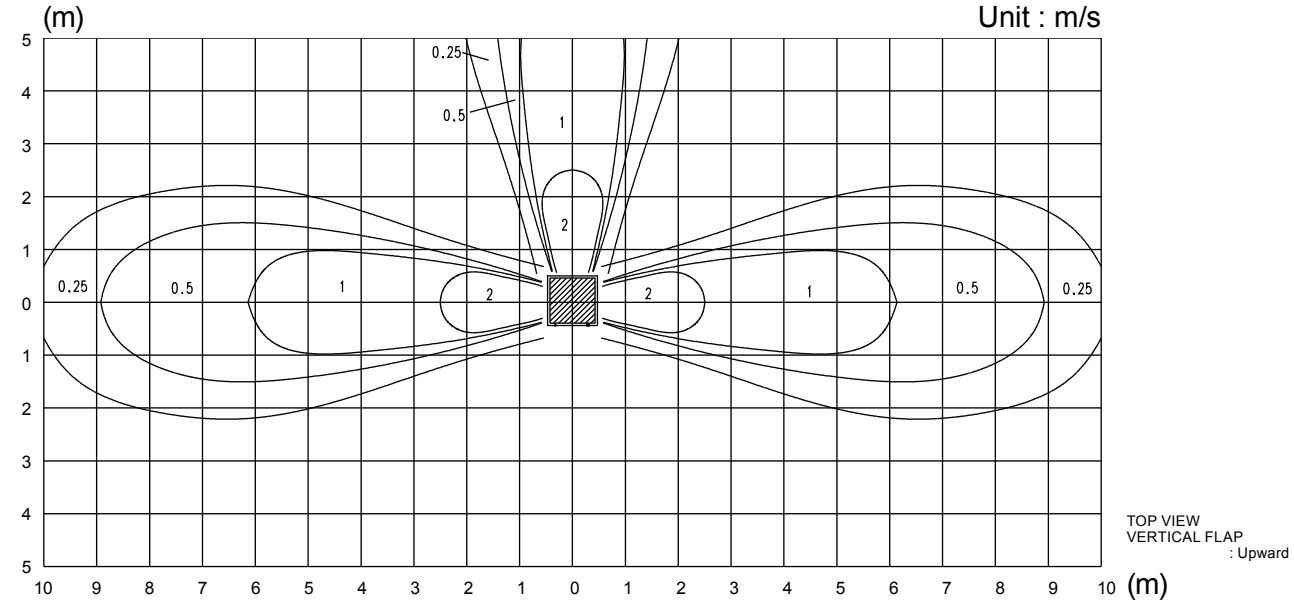


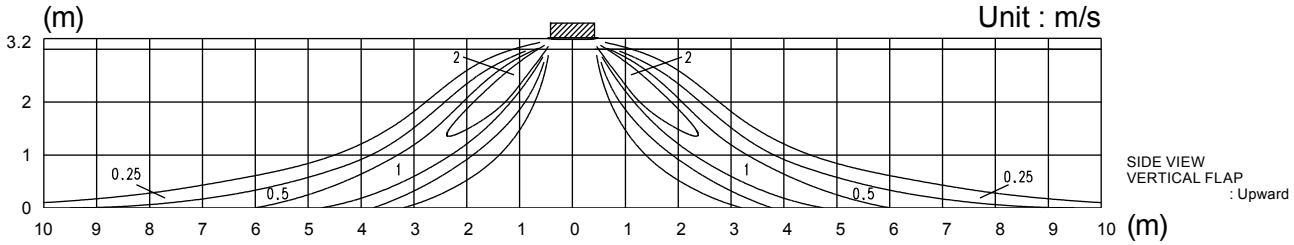
SIDE VIEW
VERTICAL FLAP
: Downward

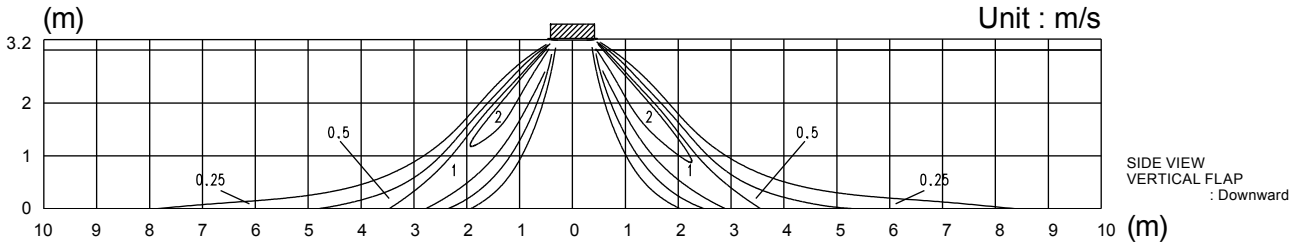
INDOOR UNIT (SINGLE)

Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

● 3-way air outlet





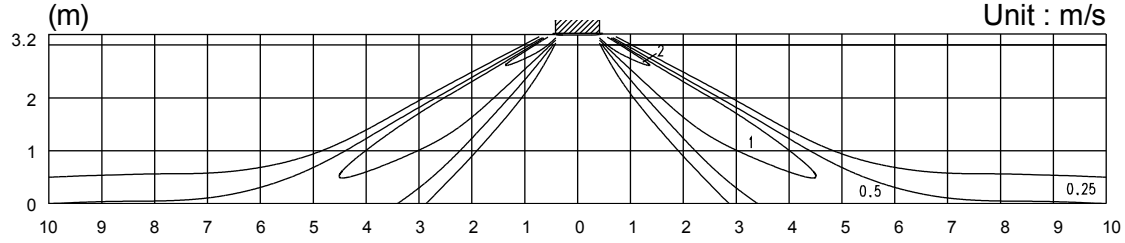


INDOOR UNIT (SINGLE)

Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■ MODEL: AU∗G36LR (SPECIAL UPWARD MODE)

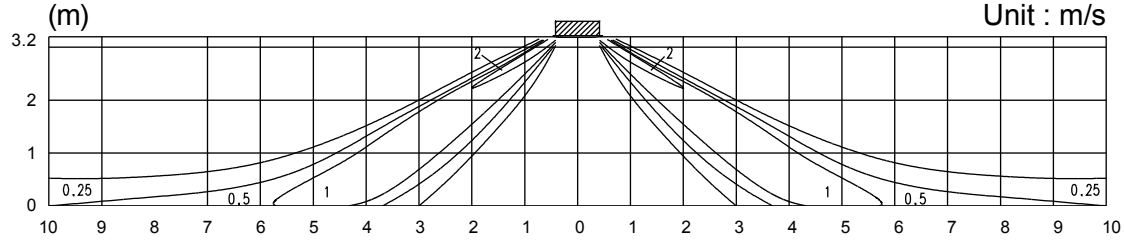
● 4-way air outlet



SIDE VIEW
VERTICAL FLAP
: Special upward

■ MODEL: AU∗G45LR (SPECIAL UPWARD MODE)

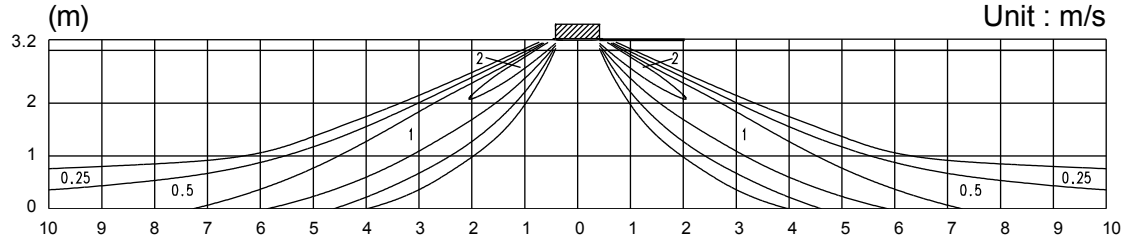
● 4-way air outlet



SIDE VIEW
VERTICAL FLAP
: Special upward

■ MODEL: AU∗G54LR (SPECIAL UPWARD MODE)

● 4-way air outlet



SIDE VIEW
VERTICAL FLAP
: Special upward

INDOOR UNIT (SINGLE)

7-1-2. AIR FLOW

■ MODEL: AU∗G36LR (4-WAY OUTLET)

● Cooling / Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	660	m^3/h	1800
		l/s	500
		CFM	1059
MED	540	m^3/h	1430
		l/s	397
		CFM	842
LOW	470	m^3/h	1250
		l/s	347
		CFM	736
QUIET	430	m^3/h	1150
		l/s	319
		CFM	677

■ MODEL: AU∗G45LR (4-WAY OUTLET)

● Cooling / Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	690	m^3/h	1900
		l/s	528
		CFM	1118
MED	610	m^3/h	1640
		l/s	456
		CFM	965
LOW	550	m^3/h	1460
		l/s	406
		CFM	859
QUIET	470	m^3/h	1250
		l/s	347
		CFM	736

INDOOR UNIT (SINGLE)

■ MODEL: AU∗G54LR (4-WAY OUTLET)

● Cooling / Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	720	m^3/h	2000
		l/s	556
		CFM	1177
MED	630	m^3/h	1700
		l/s	472
		CFM	1000
LOW	570	m^3/h	1530
		l/s	425
		CFM	900
QUIET	480	m^3/h	1300
		l/s	361
		CFM	765

INDOOR UNIT (SINGLE)

■ MODEL: AU∗G36LR (3-WAY OUTLET)

● Cooling / Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	700	m^3/h	1640
		l/s	456
		CFM	965
MED	580	m^3/h	1340
		l/s	372
		CFM	789
LOW	510	m^3/h	1160
		l/s	322
		CFM	683
QUIET	470	m^3/h	1060
		l/s	294
		CFM	624

■ MODEL: AU∗G45LR (3-WAY OUTLET)

● Cooling / Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	720	m^3/h	1690
		l/s	469
		CFM	995
MED	640	m^3/h	1490
		l/s	414
		CFM	877
LOW	580	m^3/h	1340
		l/s	372
		CFM	789
QUIET	500	m^3/h	1140
		l/s	317
		CFM	671

*Air flow can be changed according to the direction in which the outlet is blocked.

INDOOR UNIT (SINGLE)

■ MODEL: AU∗G54LR (3-WAY OUTLET)

● Cooling / Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	740	m^3/h	1740
		l/s	483
		CFM	1024
MED	650	m^3/h	1520
		l/s	422
		CFM	895
LOW	590	m^3/h	1360
		l/s	378
		CFM	800
QUIET	500	m^3/h	1140
		l/s	317
		CFM	671

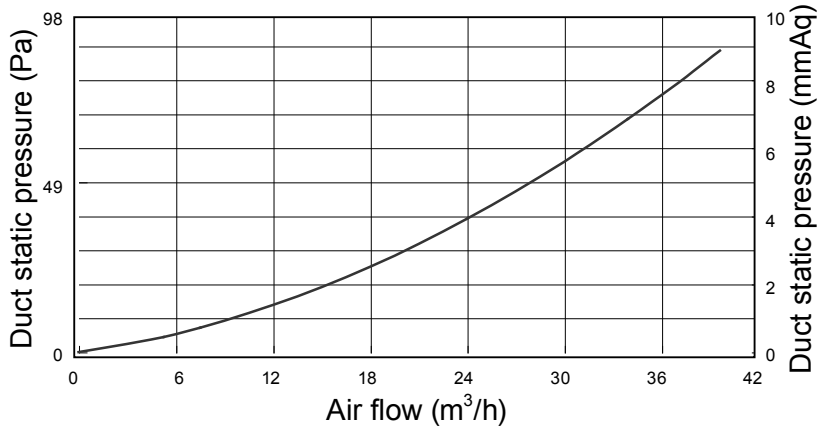
*Air flow can be changed according to the direction in which the outlet is blocked.

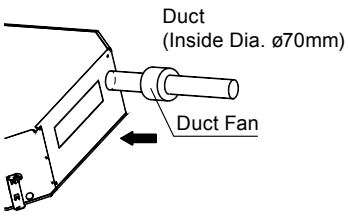
INDOOR UNIT (SINGLE)

7-1-3. FRESH AIR

■MODEL: AU∗G36LR, AU∗G45LR, AU∗G54LR

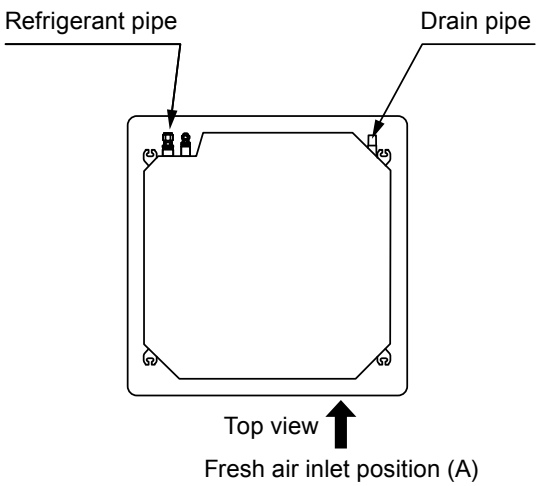
●Air flow volume - Static pressure of Fresh air intake characteristic

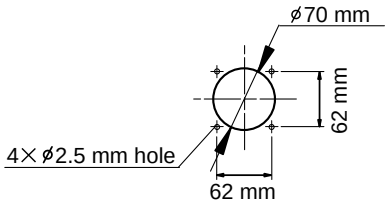


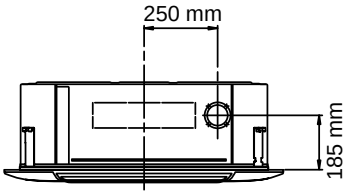


Static pressure required
to take in fresh air

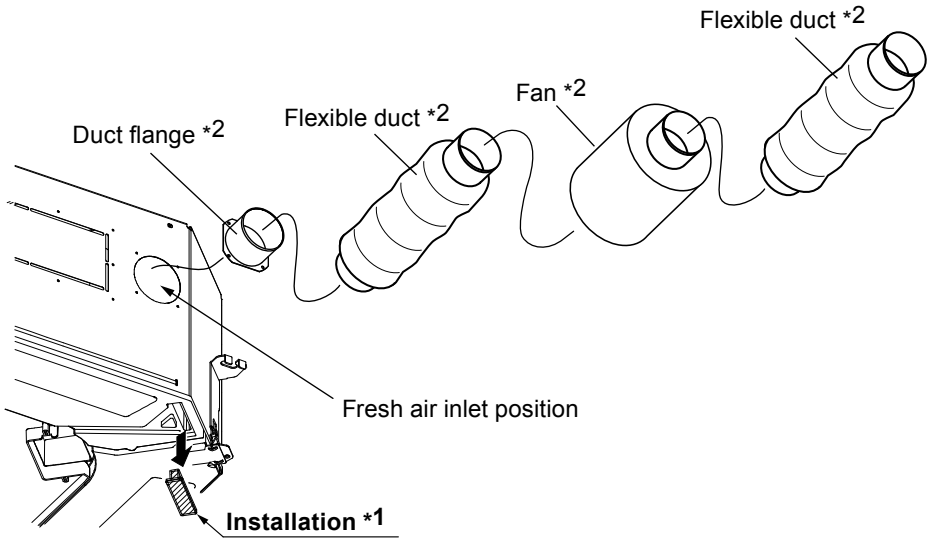
●Installation







Fresh air inlet position



*1: In case of fresh air intake, please remove the insulation.

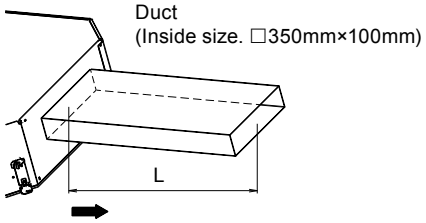
*2: Locally procured parts

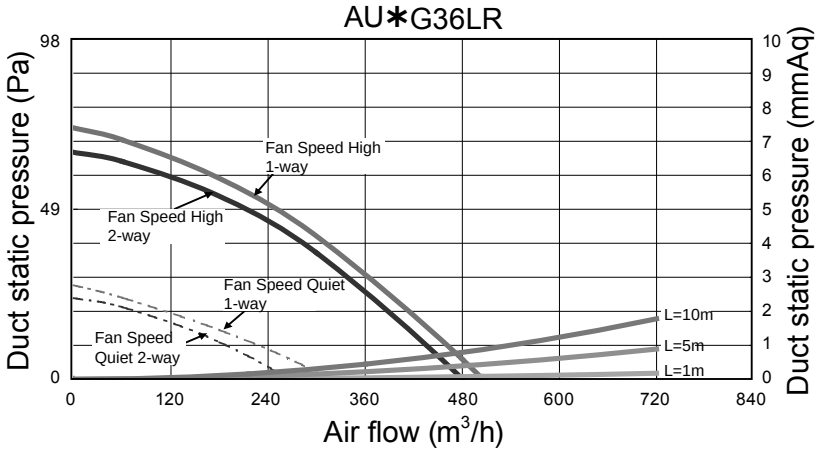
INDOOR UNIT (SINGLE)

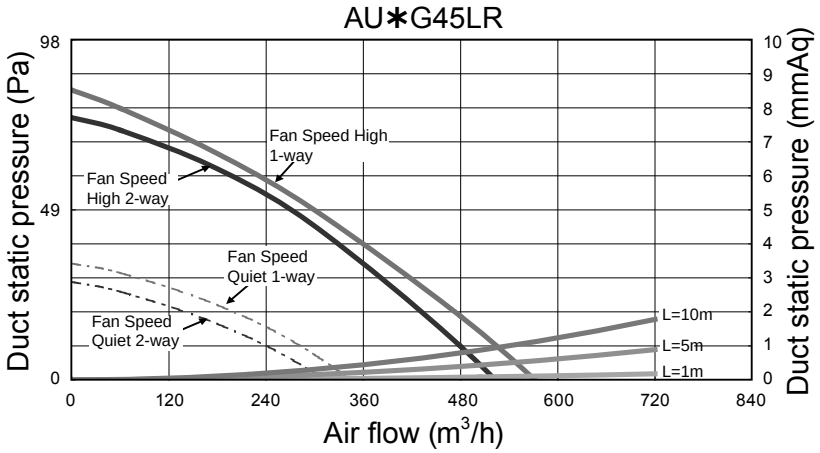
7-1-4. DUCT CONNECTION

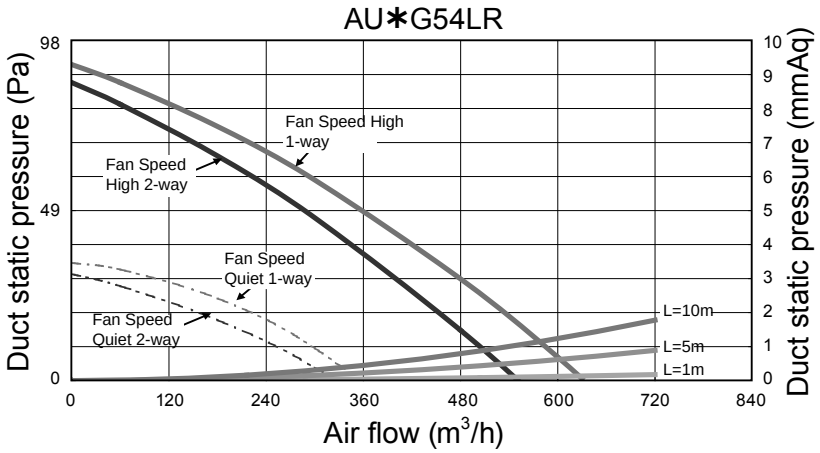
■ MODEL: AU∗G36LR, AU∗G45LR, AU∗G54LR

● Outlet air





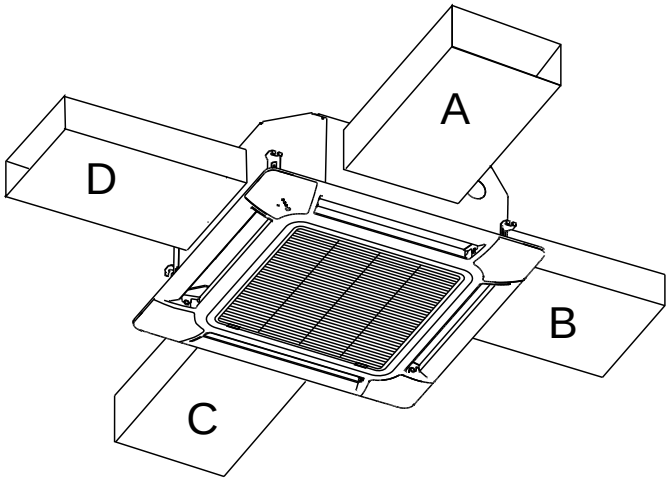




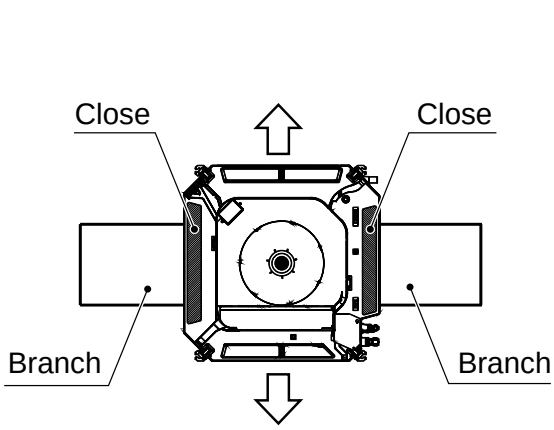
INDOOR UNIT (SINGLE)

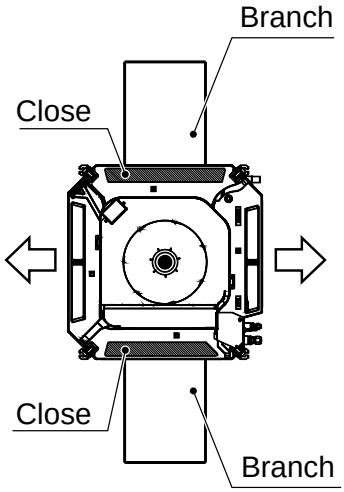
■ PRECAUTIONS WHILE CONNECTING AIR OUTLET DUCT

- Connect the air outlet duct at up to two locations among the four duct connection locations. (Do not connect ducts at three or more locations.)

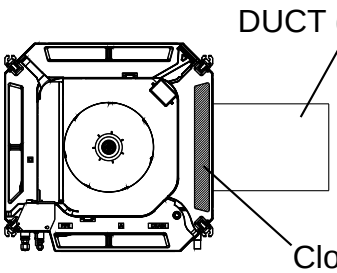


- Blow-off pattern when a branch duct is installed bi-directional branching, main unit bi-directional branching





- Once the location where the duct is to be connected is decided, always be sure to close the outlets in the same direction.



*Use only after closing the outlet of the cassette on the side on which the duct is used, using the “Air outlet shutter plate (UTR-YDZC)”.

INDOOR UNIT (SINGLE)

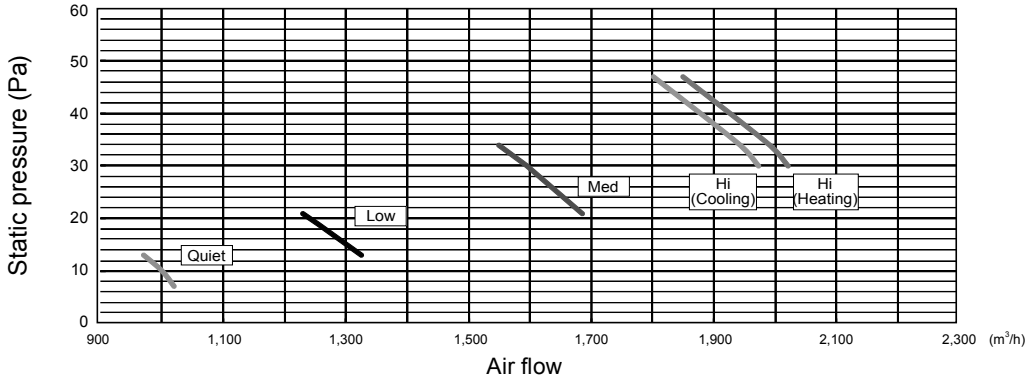
7-2. DUCT TYPE

7-2-1. NORMAL MODE

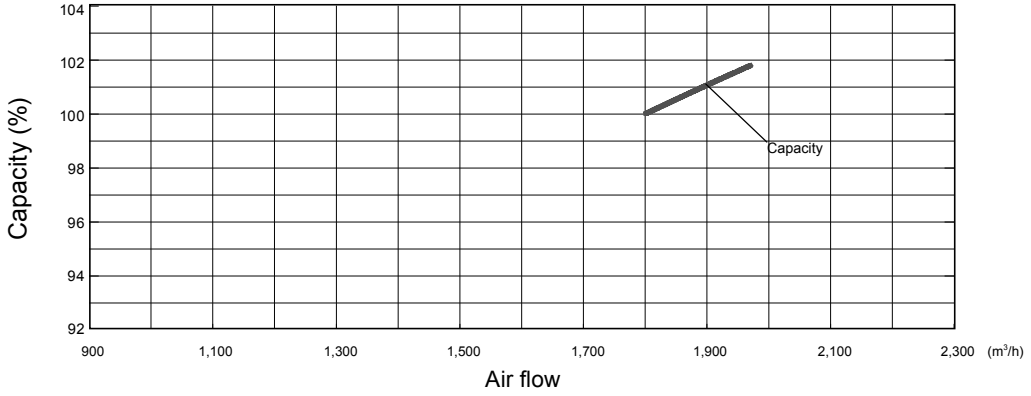
■ MODEL: AR∗G36LM

			Static pressure (Pa)							
			7	10	13	19	21	30	34	47
	Hi (Heating)	m^3/h	-	-	-	-	-	2020	1990	1850
		l/s	-	-	-	-	-	561	553	514
		CFM	-	-	-	-	-	1189	1171	1089
	Hi (Cooling)	m^3/h	-	-	-	-	-	1970	1940	1800
		l/s	-	-	-	-	-	547	553	500
		CFM	-	-	-	-	-	1160	1142	1060
	Med	m^3/h	-	-	-	-	1685	1595	1550	-
		l/s	-	-	-	-	468	443	431	-
		CFM	-	-	-	-	992	939	912	-
	Low	m^3/h	-	-	1325	1255	1230	-	-	-
		l/s	-	-	368	349	342	-	-	-
		CFM	-	-	780	739	724	-	-	-
	Quiet	m^3/h	1020	1000	970	-	-	-	-	-
		l/s	283	278	269	-	-	-	-	-
		CFM	600	589	571	-	-	-	-	-

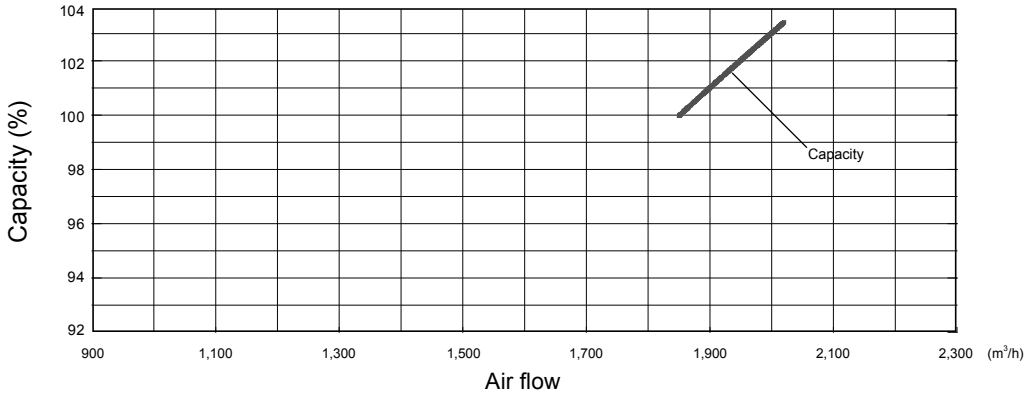
Q-h Characteristic curve



COOLING



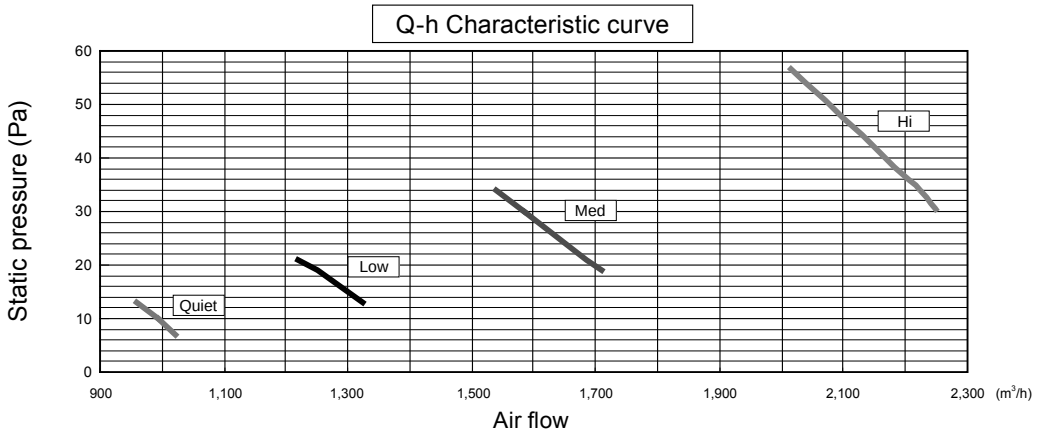
HEATING

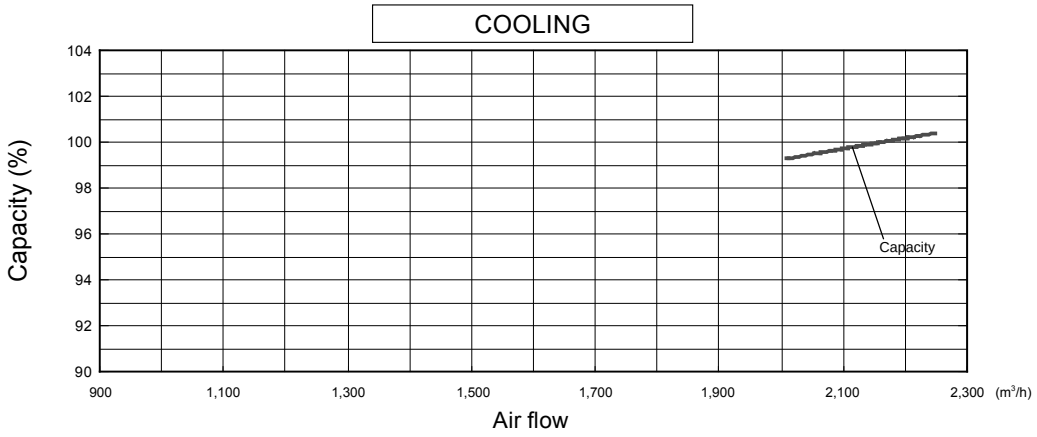


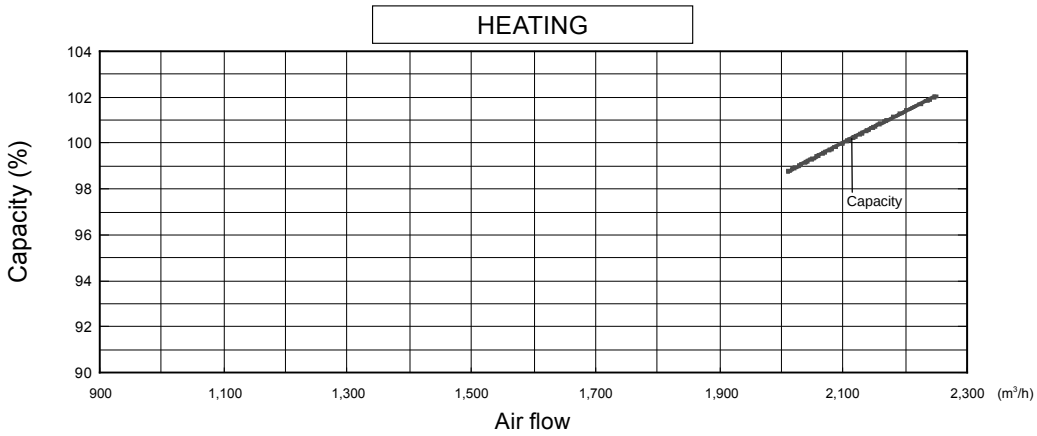
INDOOR UNIT (SINGLE)

■MODEL: AR∗G45LM

			Static pressure (Pa)							
			7	10	13	19	21	30	34	57
FAN SPEED	Hi	m^3/h	-	-	-	-	-	2250	2223	2010
		l/s	-	-	-	-	-	625	618	558
		CFM	-	-	-	-	-	1324	1308	1183
	Med	m^3/h	-	-	-	1710	1685	1585	1540	-
		l/s	-	-	-	475	468	440	428	-
		CFM	-	-	-	1006	992	933	906	-
	Low	m^3/h	-	-	1325	1250	1220	-	-	-
		l/s	-	-	368	347	339	-	-	-
		CFM	-	-	780	736	718	-	-	-
	Quiet	m^3/h	1020	995	960	-	-	-	-	-
		l/s	283	276	267	-	-	-	-	-
		CFM	600	586	565	-	-	-	-	-





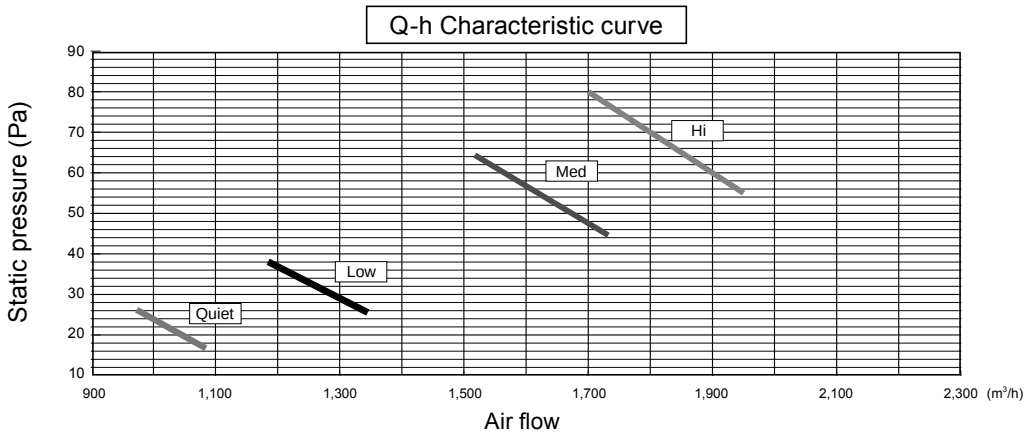


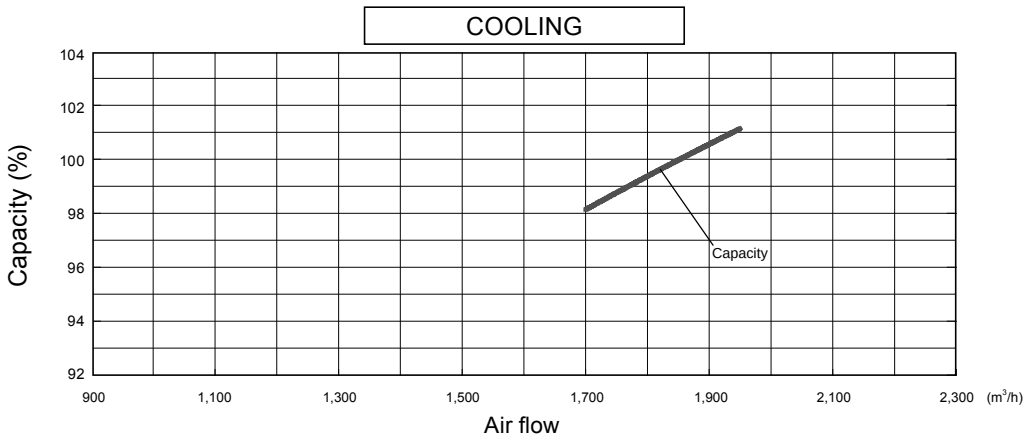
INDOOR UNIT (SINGLE)

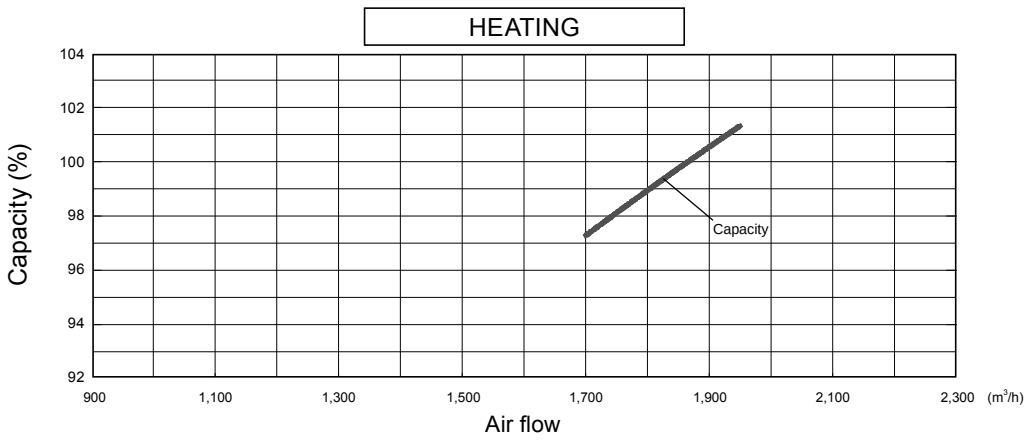
7-2-2. HIGH STATIC PRESSURE MODE 1

■ MODEL: AR∗G36LM

			Static pressure (Pa)							
			17	26	32	38	45	55	64	80
FAN SPEED	Hi	m^3/h	-	-	-	-	-	1950	1860	1700
		l/s	-	-	-	-	-	542	517	472
		CFM	-	-	-	-	-	1148	1095	1001
	Med	m^3/h	-	-	-	-	1730	1620	1520	-
		l/s	-	-	-	-	481	450	422	-
		CFM	-	-	-	-	1018	953	895	-
	Low	m^3/h	-	1340	1265	1190	-	-	-	-
		l/s	-	372	351	331	-	-	-	-
		CFM	-	789	745	700	-	-	-	-
	Quiet	m^3/h	1080	970	-	-	-	-	-	-
		l/s	300	269	-	-	-	-	-	-
		CFM	636	571	-	-	-	-	-	-



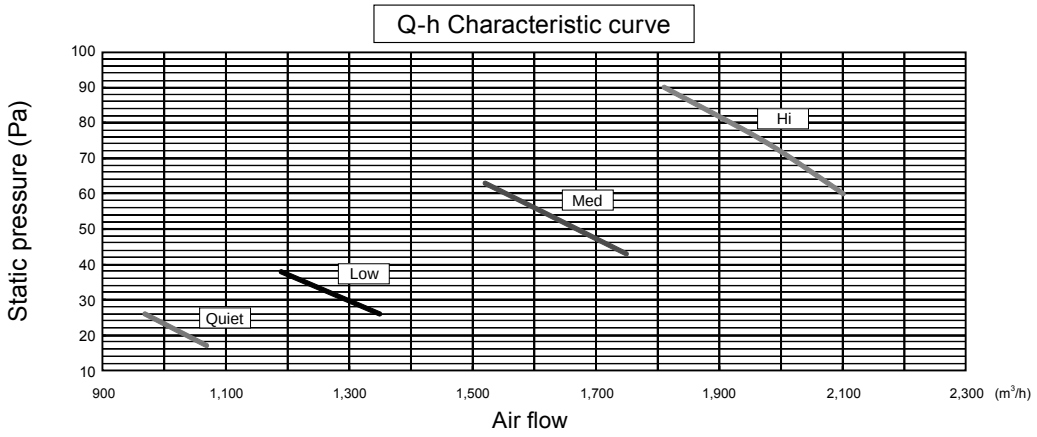


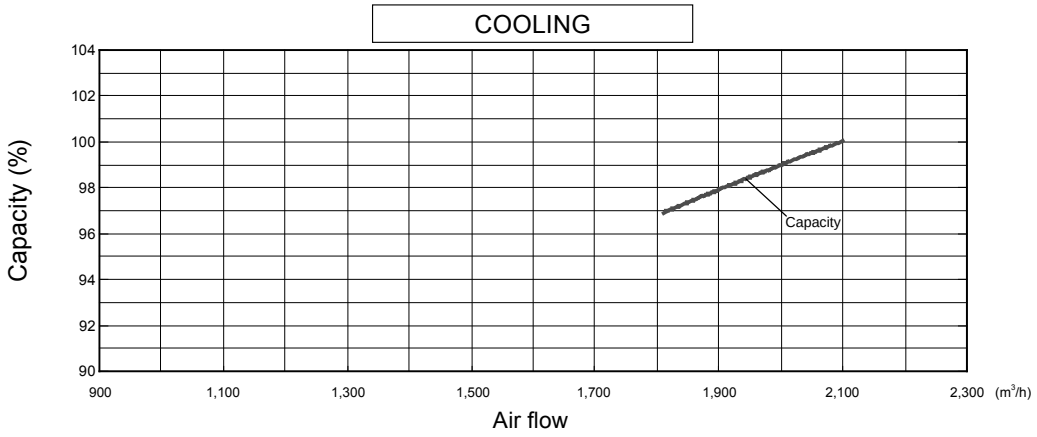


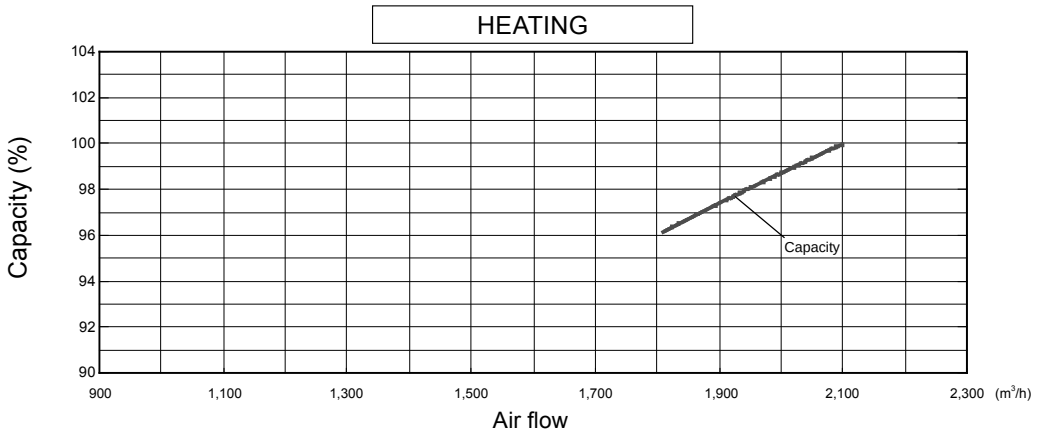
INDOOR UNIT (SINGLE)

■MODEL: AR∗G45LM

			Static pressure (Pa)							
			17	26	38	43	60	63	75	90
FAN SPEED	Hi	m^3/h	-	-	-	-	2100	2075	1970	1810
		l/s	-	-	-	-	583	576	547	503
		CFM	-	-	-	-	1236	1221	1159	1065
	Med	m^3/h	-	-	-	1750	1555	1520	-	-
		l/s	-	-	-	486	432	422	-	-
		CFM	-	-	-	1030	915	895	-	-
	Low	m^3/h	-	1350	1190	-	-	-	-	-
		l/s	-	375	331	-	-	-	-	-
		CFM	-	795	700	-	-	-	-	-
	Quiet	m^3/h	1070	970	-	-	-	-	-	-
		l/s	297	269	-	-	-	-	-	-
		CFM	630	571	-	-	-	-	-	-





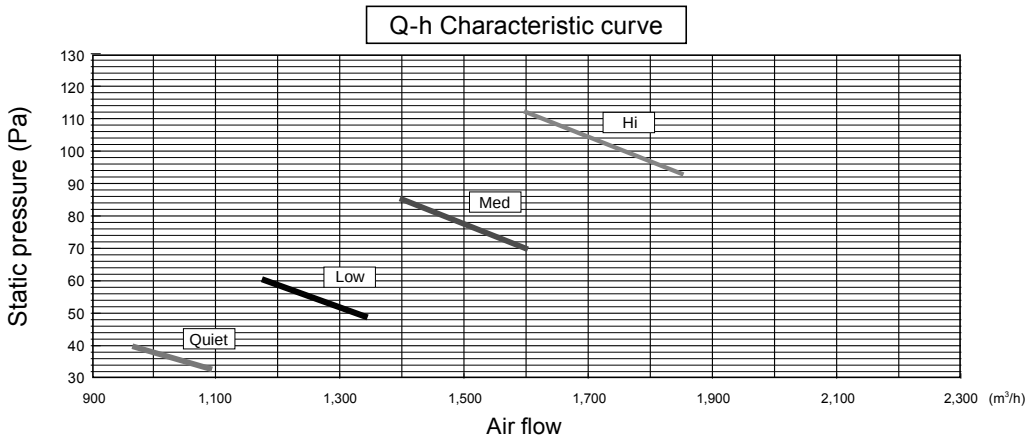


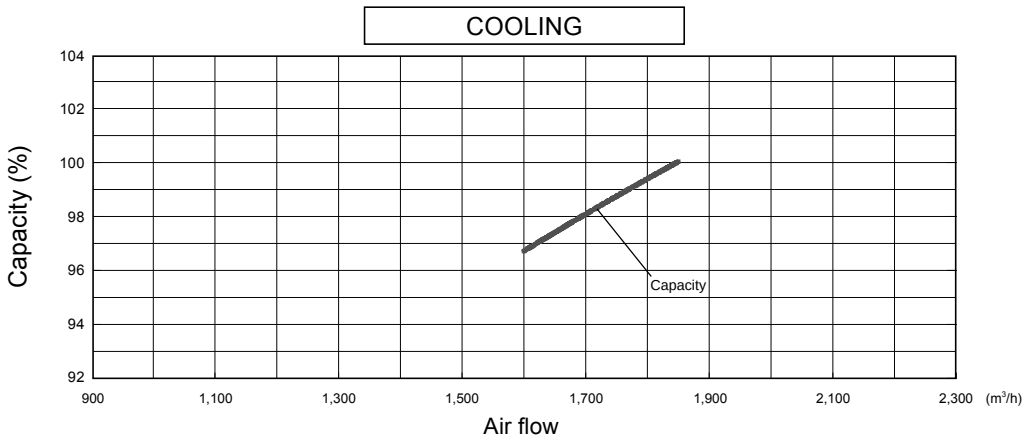
INDOOR UNIT (SINGLE)

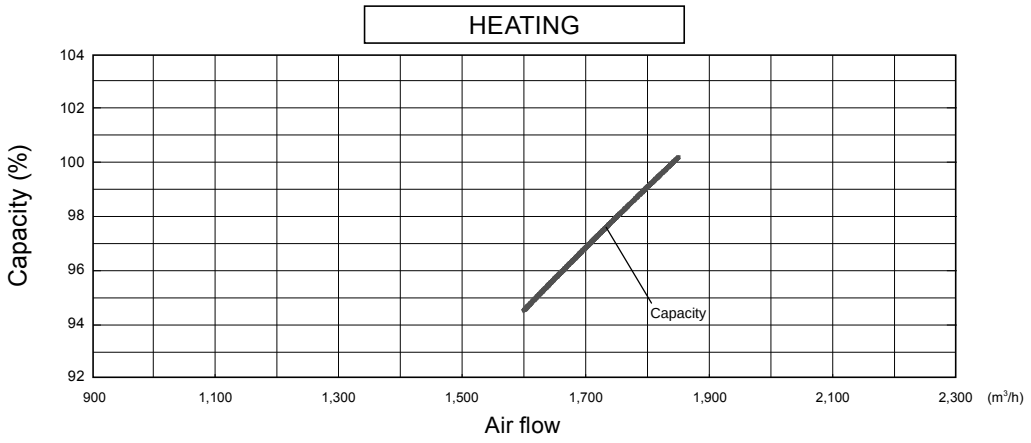
7-2-3. HIGH STATIC PRESSURE MODE 2

■ MODEL: AR∗G36LM

			Static pressure (Pa)							
			33	40	49	60	70	85	93	112
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1850	1600
		l/s	-	-	-	-	-	-	514	444
		CFM	-	-	-	-	-	-	1089	942
	Med	m^3/h	-	-	-	-	1600	1400	-	-
		l/s	-	-	-	-	444	389	-	-
		CFM	-	-	-	-	942	824	-	-
	Low	m^3/h	-	-	1340	1180	-	-	-	-
		l/s	-	-	372	328	-	-	-	-
		CFM	-	-	789	695	-	-	-	-
	Quiet	m^3/h	1090	960	-	-	-	-	-	-
		l/s	303	267	-	-	-	-	-	-
		CFM	642	565	-	-	-	-	-	-



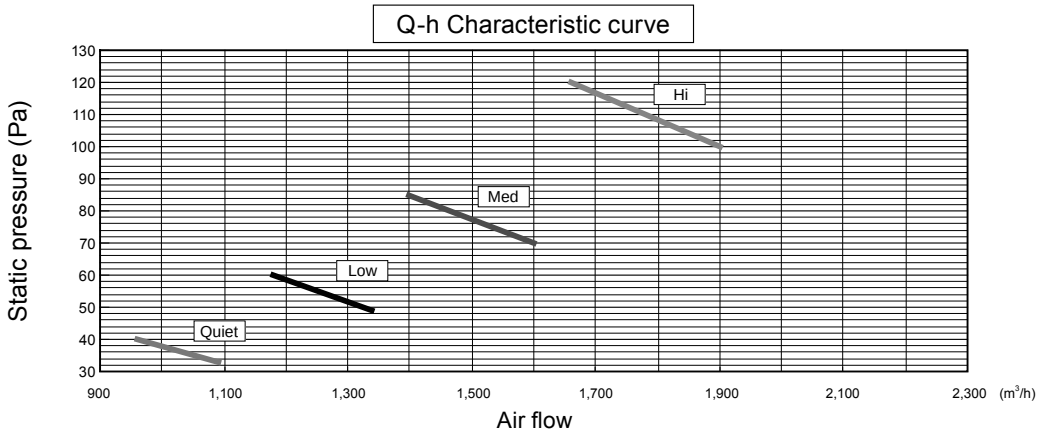


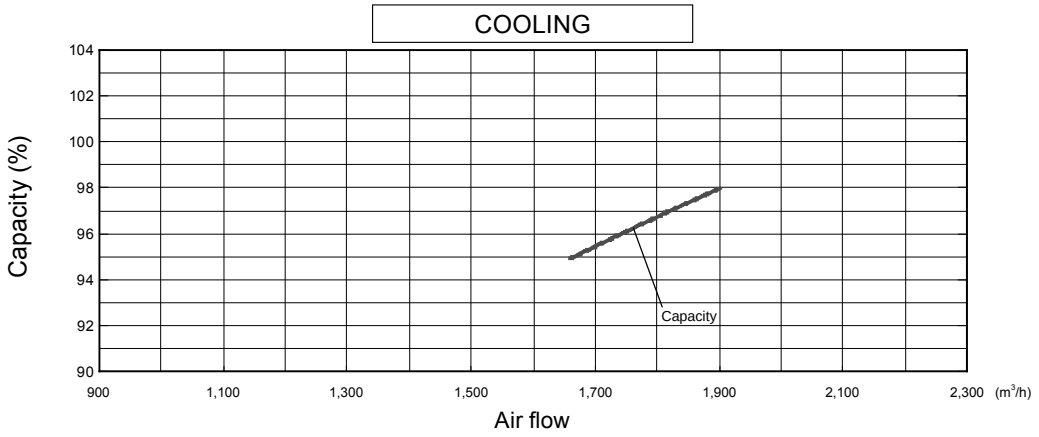


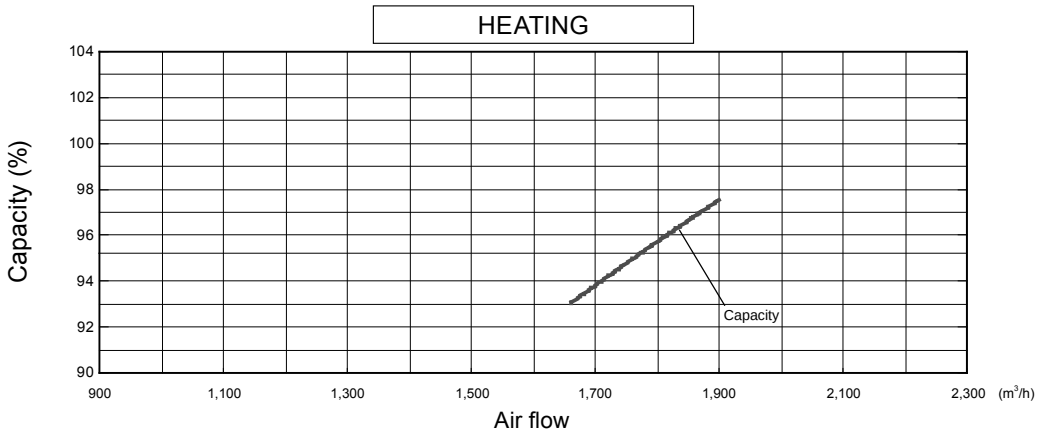
INDOOR UNIT (SINGLE)

■MODEL: AR∗G45LM

			Static pressure (Pa)							
			33	40	49	60	70	85	100	120
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1900	1660
		l/s	-	-	-	-	-	-	528	461
		CFM	-	-	-	-	-	-	1118	977
	Med	m^3/h	-	-	-	-	1600	1400	-	-
		l/s	-	-	-	-	444	389	-	-
		CFM	-	-	-	-	942	824	-	-
	Low	m^3/h	-	-	1340	1180	-	-	-	-
		l/s	-	-	372	328	-	-	-	-
		CFM	-	-	789	695	-	-	-	-
	Quiet	m^3/h	1090	960	-	-	-	-	-	-
		l/s	303	267	-	-	-	-	-	-
		CFM	642	565	-	-	-	-	-	-





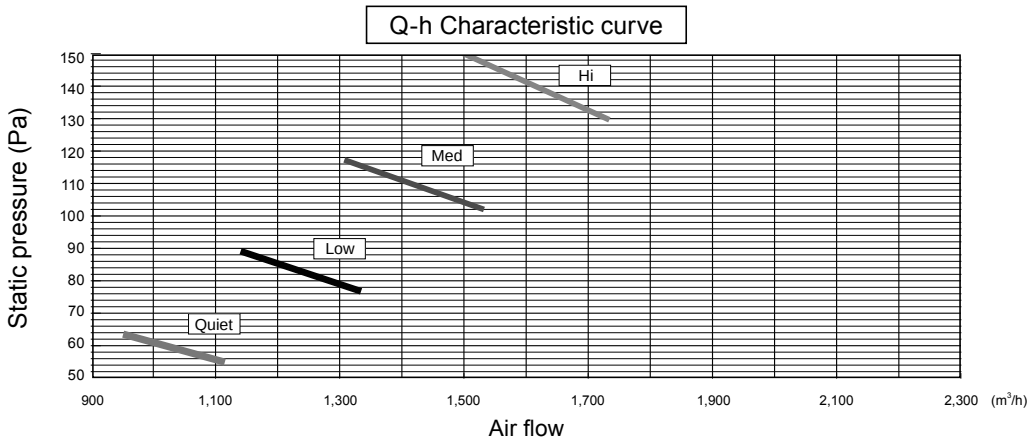


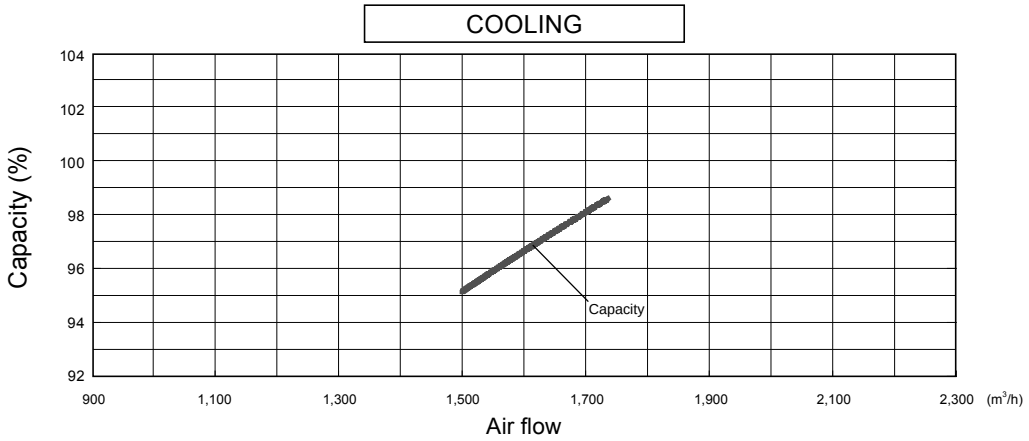
INDOOR UNIT (SINGLE)

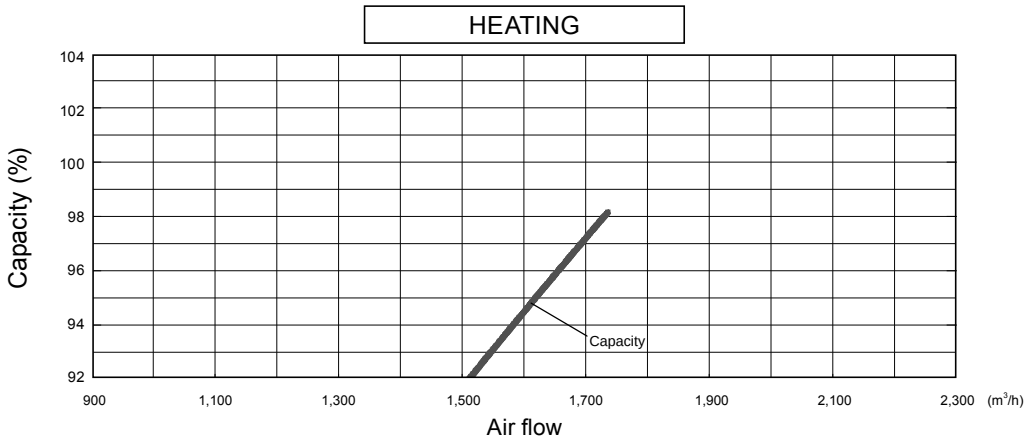
7-2-4. HIGH STATIC PRESSURE MODE 3

■ MODEL: AR∗G36LM

			Static pressure (Pa)							
			55	63	77	89	102	117	130	150
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1730	1500
		l/s	-	-	-	-	-	-	481	417
		CFM	-	-	-	-	-	-	1018	883
	Med	m^3/h	-	-	-	-	1530	1310	-	-
		l/s	-	-	-	-	425	364	-	-
		CFM	-	-	-	-	901	771	-	-
	Low	m^3/h	-	-	1330	1140	-	-	-	-
		l/s	-	-	369	317	-	-	-	-
		CFM	-	-	783	671	-	-	-	-
	Quiet	m^3/h	1110	960	-	-	-	-	-	-
		l/s	308	267	-	-	-	-	-	-
		CFM	653	565	-	-	-	-	-	-



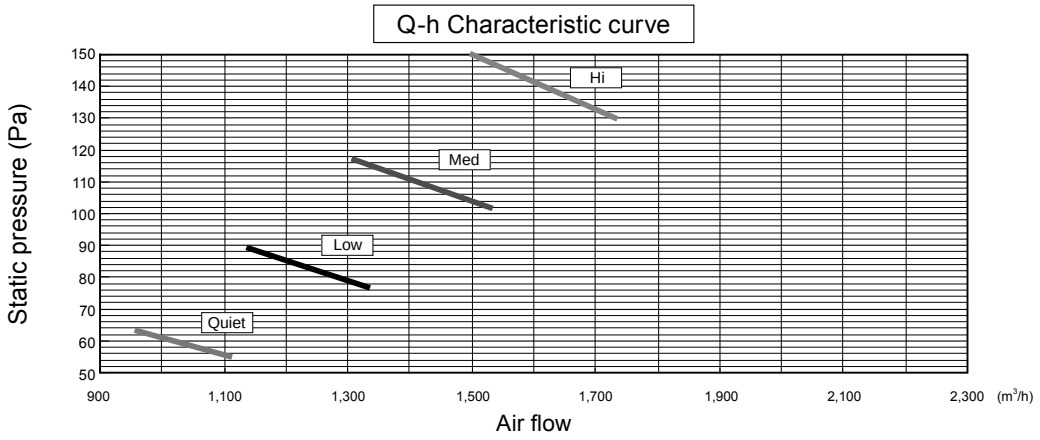


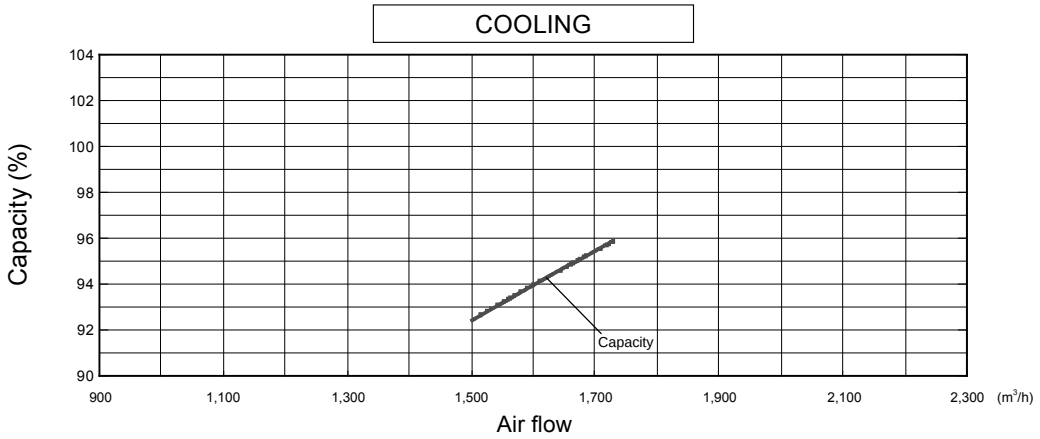


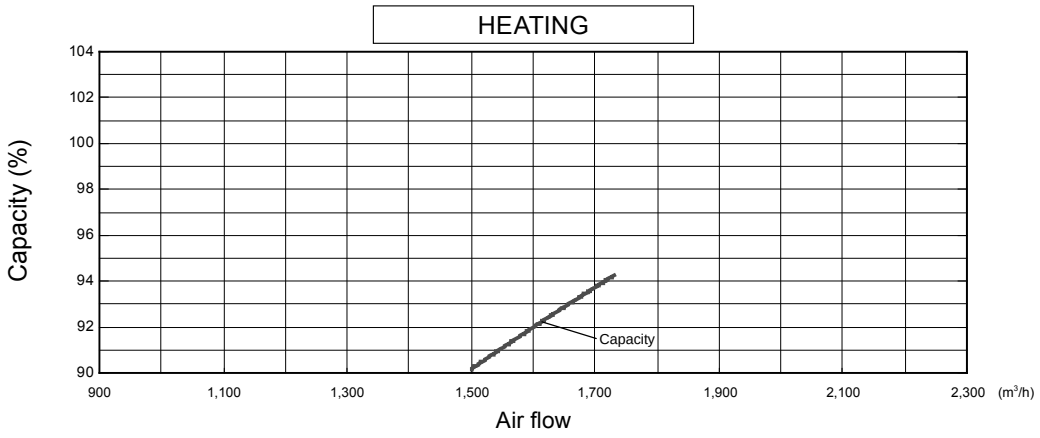
INDOOR UNIT (SINGLE)

■MODEL: AR∗G45LM

			Static pressure (Pa)							
			55	63	77	89	102	117	130	150
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1730	1500
		l/s	-	-	-	-	-	-	481	417
		CFM	-	-	-	-	-	-	1018	883
	Med	m^3/h	-	-	-	-	1530	1310	-	-
		l/s	-	-	-	-	425	364	-	-
		CFM	-	-	-	-	901	771	-	-
	Low	m^3/h	-	-	1330	1140	-	-	-	-
		l/s	-	-	369	317	-	-	-	-
		CFM	-	-	783	671	-	-	-	-
	Quiet	m^3/h	1110	960	-	-	-	-	-	-
		l/s	308	267	-	-	-	-	-	-
		CFM	653	565	-	-	-	-	-	-





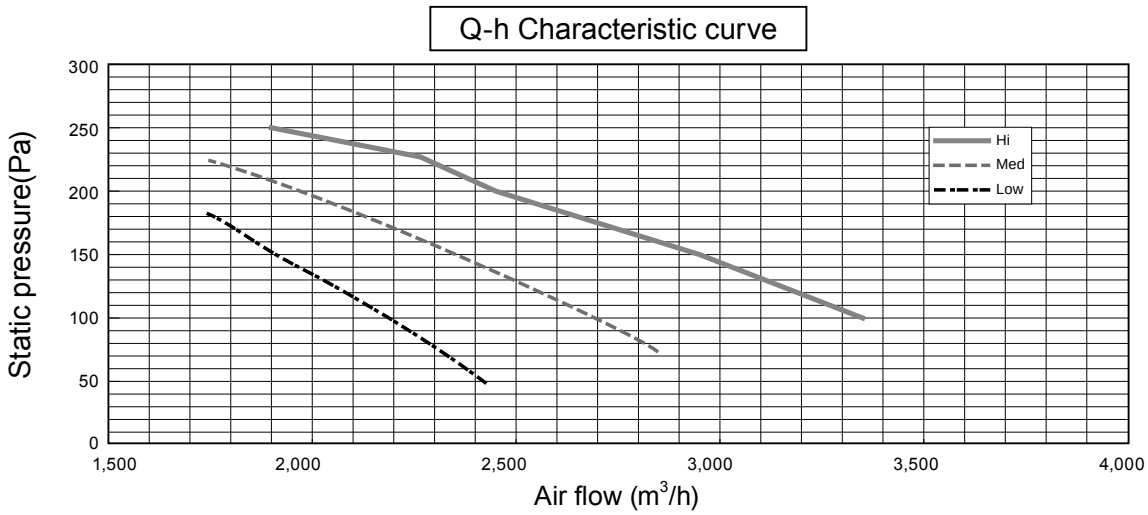


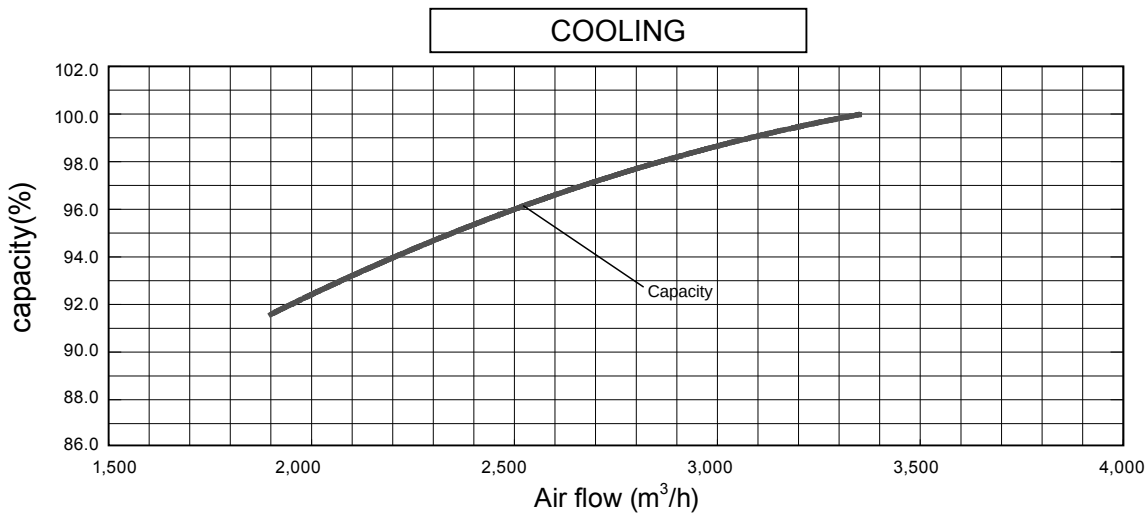
INDOOR UNIT (SINGLE)

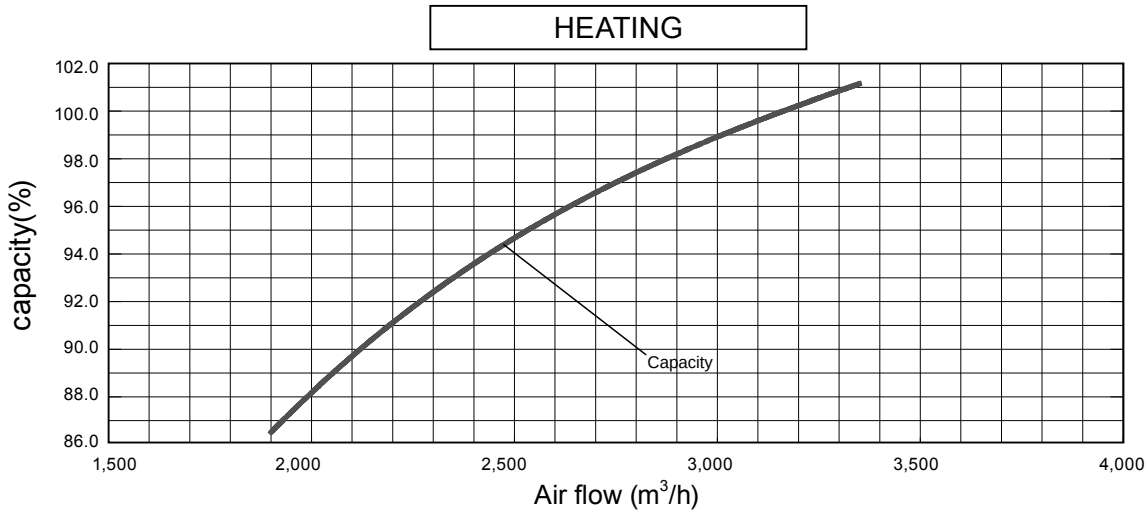
7-3. HIGH STATIC PRESSURE DUCT TYPE

■ MODEL: AR∗G45LH

			Static pressure (Pa)								
			50	75	100	125	150	175	200	225	250
FAN SPEED	Hi	m^3/h	-	-	3350	3150	2950	2700	2450	2280	1900
		l/s	-	-	931	875	819	750	681	633	528
		CFM	-	-	1972	1854	1736	1589	1442	1342	1118
	Med	m^3/h	-	2850	2700	2520	2350	2160	1970	1750	-
		l/s	-	792	750	700	653	600	547	486	-
		CFM	-	1677	1589	1483	1383	1271	1159	1030	-
	Low	m^3/h	2430	2310	2180	2050	1900	1750	-	-	-
		l/s	675	642	606	569	528	486	-	-	-
		CFM	1430	1360	1283	1207	1118	1030	-	-	-





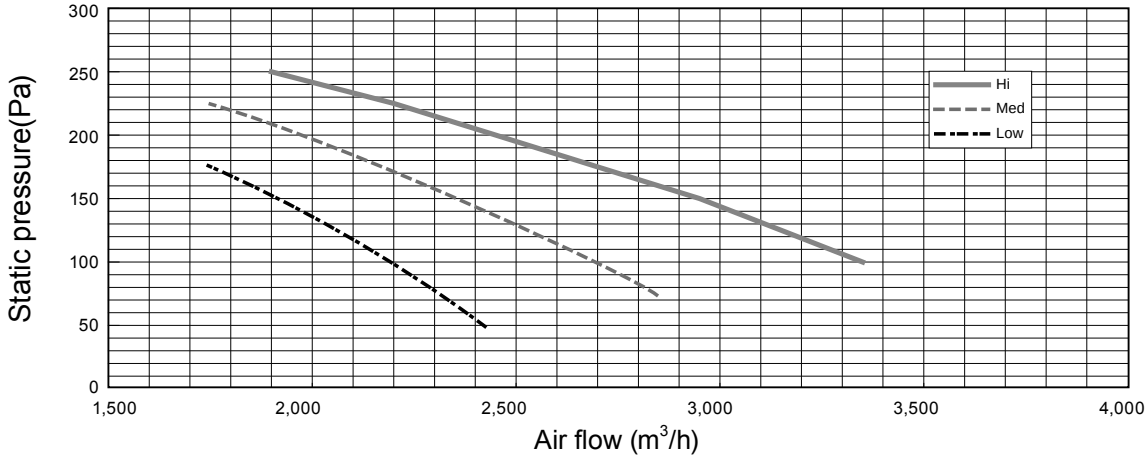


INDOOR UNIT (SINGLE)

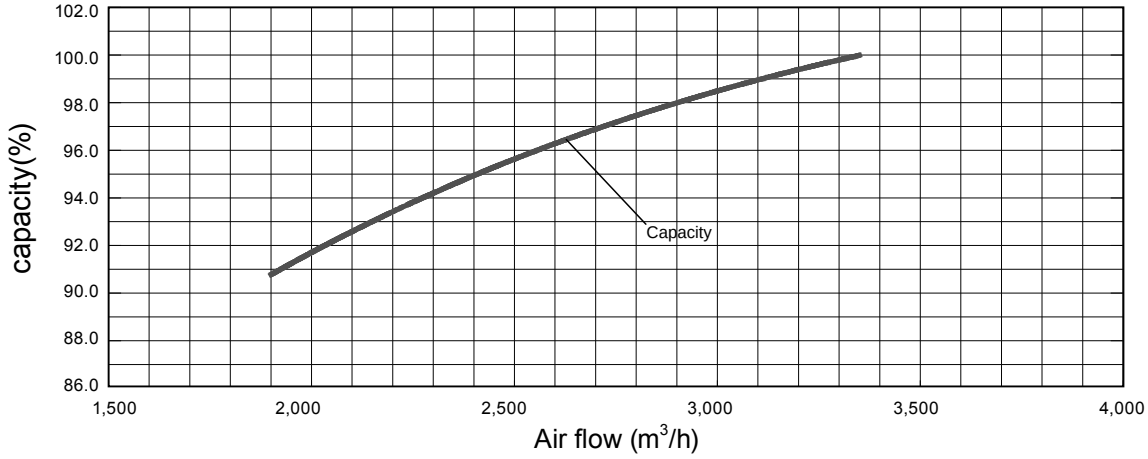
■MODEL: AR∗G54LH

			Static pressure (Pa)								
			50	75	100	125	150	175	200	225	250
FAN SPEED	Hi	m^3/h	-	-	3350	3150	2950	2700	2450	2280	1900
		l/s	-	-	931	875	819	750	681	633	528
		CFM	-	-	1972	1854	1736	1589	1442	1342	1118
	Med	m^3/h	-	2850	2700	2520	2350	2160	1970	1750	-
		l/s	-	792	750	700	653	600	547	486	-
		CFM	-	1677	1589	1483	1383	1271	1159	1030	-
	Low	m^3/h	2430	2310	2180	2050	1900	1750	-	-	-
		l/s	675	642	606	569	528	486	-	-	-
		CFM	1430	1360	1283	1207	1118	1030	-	-	-

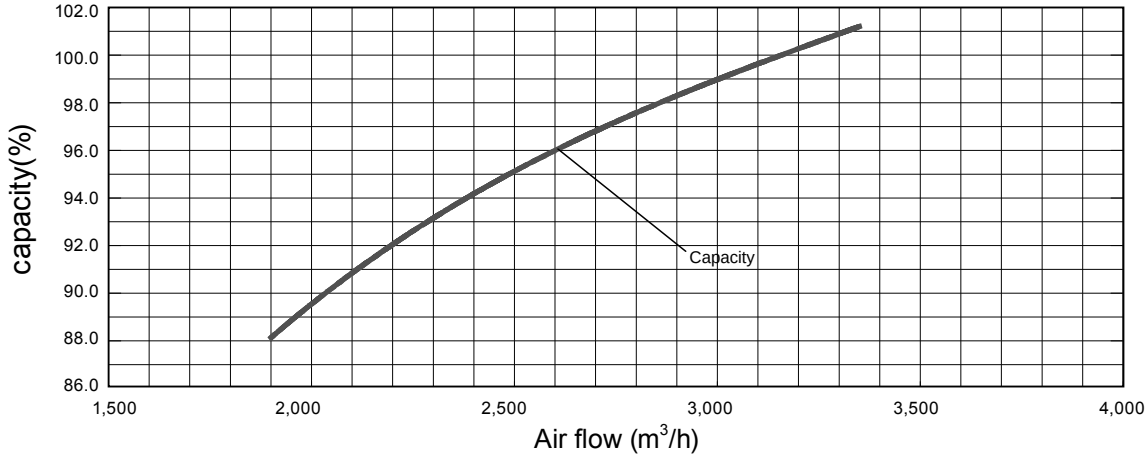
Q-h Characteristic curve



COOLING



HEATING



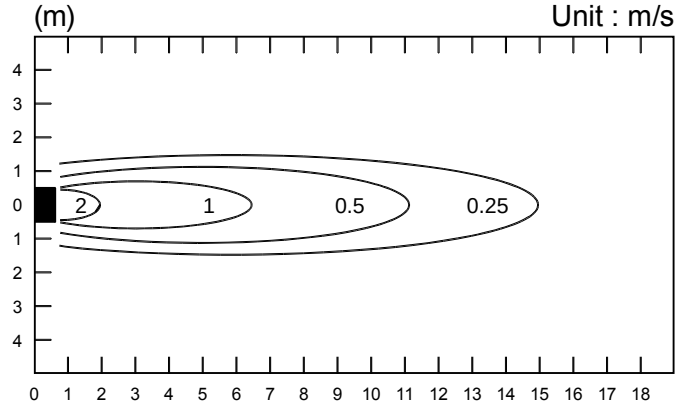
INDOOR UNIT (SINGLE)

7-4. CEILING TYPE

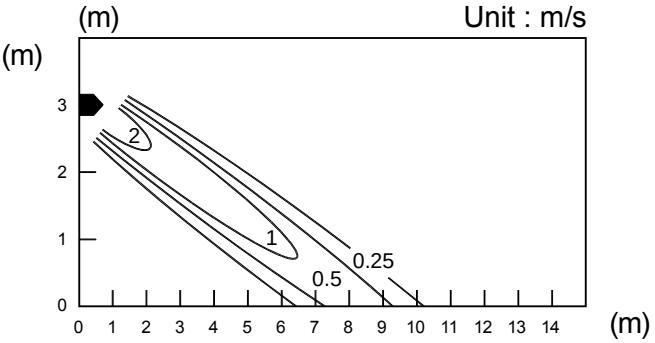
7-4-1. AIR VELOCITY DISTRIBUTION

■ MODEL: AB∗G36LR

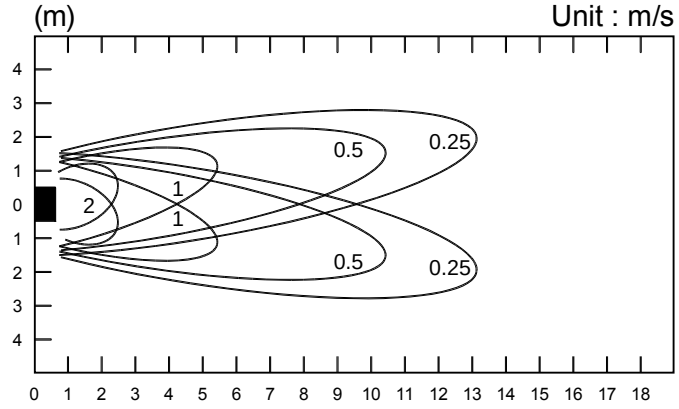
Note:
Condition
Fan speed : High
Operation mode : FAN



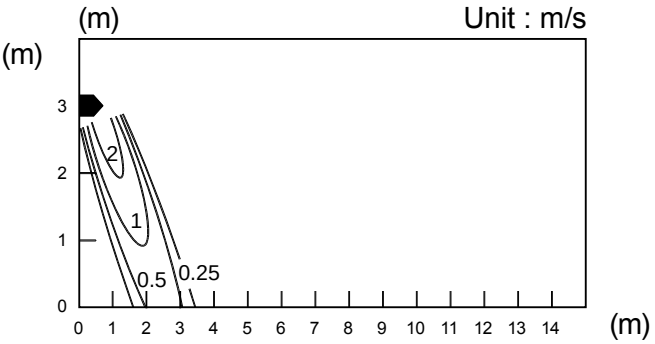
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



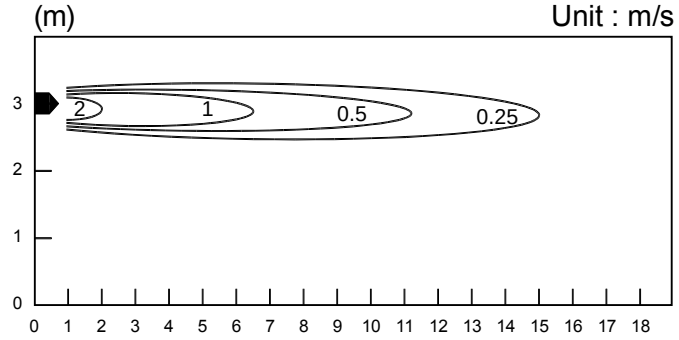
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : RIGHT AND LEFT



SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER

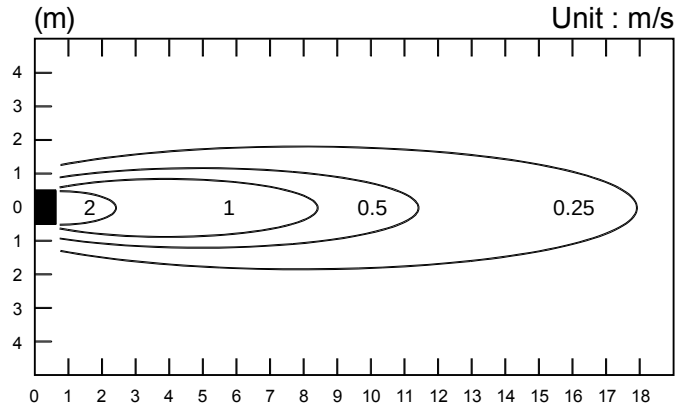


SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER

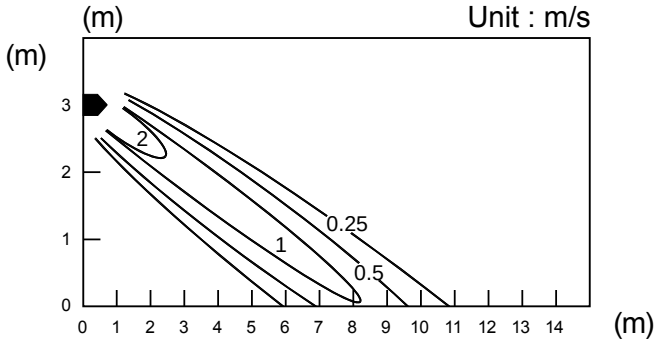
INDOOR UNIT (SINGLE)

Note:
Condition
Fan speed : High
Operation mode : FAN

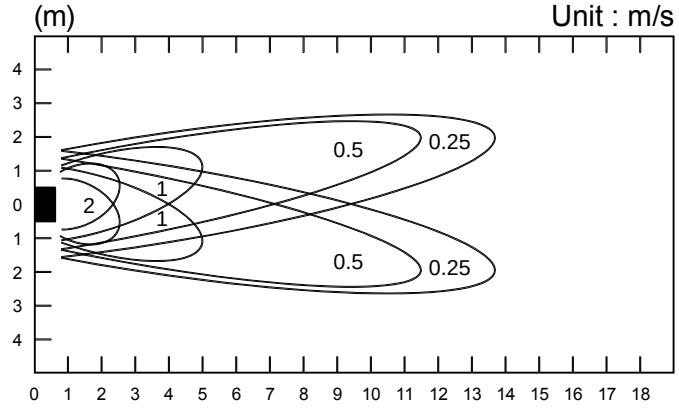
■MODEL: AB∗G45LR



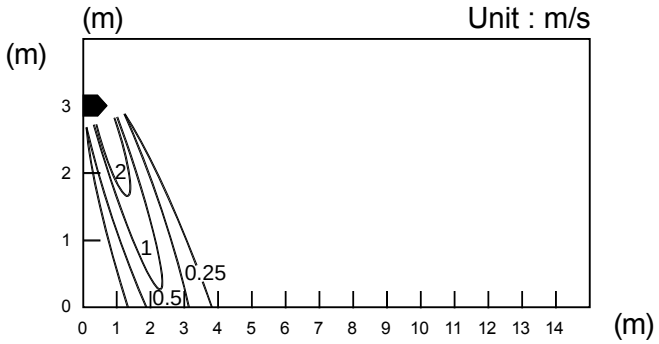
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



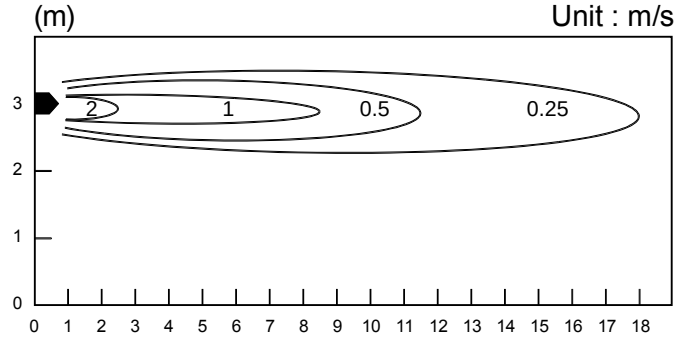
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : RIGHT AND LEFT



SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER

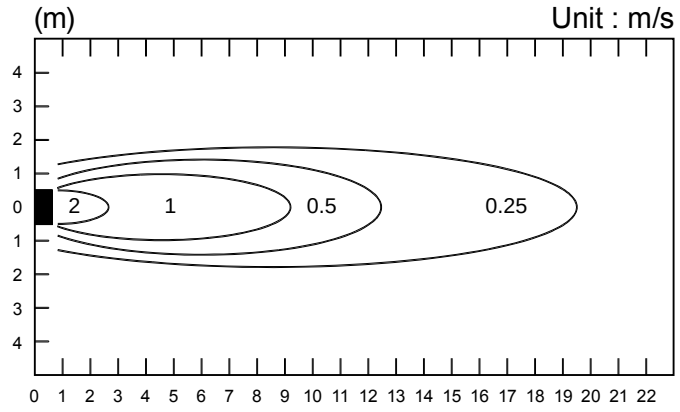


SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER

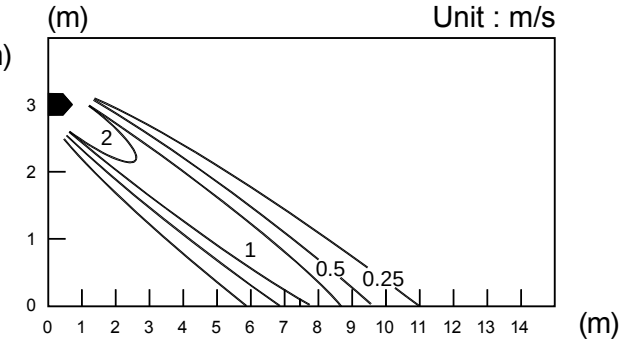
INDOOR UNIT (SINGLE)

Note:
Condition
Fan speed : High
Operation mode : FAN

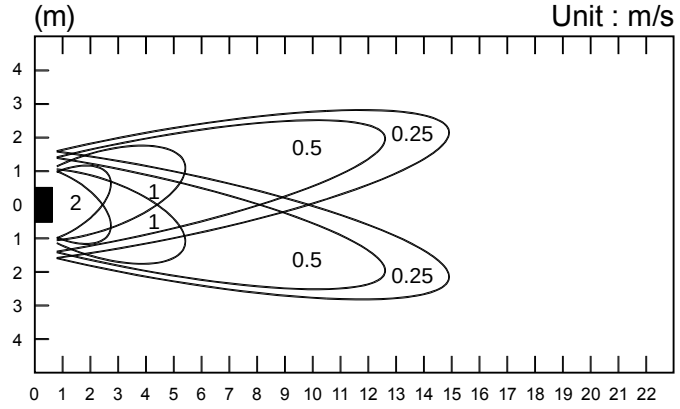
■MODEL: AB∗G54LR



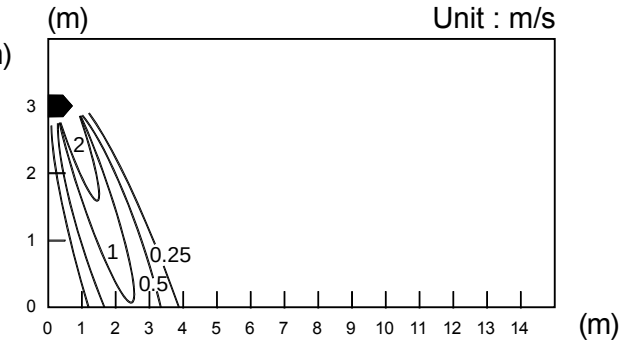
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



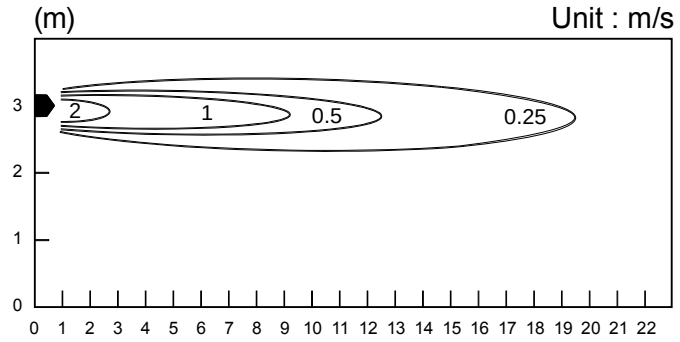
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : RIGHT AND LEFT



SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER



SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER

INDOOR UNIT (SINGLE)

7-4-2. AIR FLOW

■ MODEL: AB∗G36LR

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1100	m^3/h	1900
		l/s	528
		CFM	1738
MED	910	m^3/h	1500
		l/s	417
		CFM	883
LOW	750	m^3/h	1200
		l/s	333
		CFM	706
QUIET	650	m^3/h	1000
		l/s	278
		CFM	589

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1100	m^3/h	1900
		l/s	528
		CFM	1738
MED	910	m^3/h	1500
		l/s	417
		CFM	883
LOW	750	m^3/h	1200
		l/s	333
		CFM	706
QUIET	650	m^3/h	1000
		l/s	278
		CFM	589

INDOOR UNIT (SINGLE)

■MODEL: AB∗G45LR

●Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1200	m^3/h	2100
		l/s	583
		CFM	1236
MED	1000	m^3/h	1700
		l/s	472
		CFM	1000
LOW	830	m^3/h	1400
		l/s	389
		CFM	824
QUIET	680	m^3/h	1100
		l/s	306
		CFM	647

●Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1200	m^3/h	2100
		l/s	583
		CFM	1236
MED	1000	m^3/h	1700
		l/s	472
		CFM	1000
LOW	830	m^3/h	1400
		l/s	389
		CFM	824
QUIET	680	m^3/h	1100
		l/s	306
		CFM	647

INDOOR UNIT (SINGLE)

■MODEL: AB∗G54LR

●Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1360	m^3/h	2300
		l/s	639
		CFM	1354
MED	1150	m^3/h	1950
		l/s	542
		CFM	1148
LOW	950	m^3/h	1600
		l/s	444
		CFM	942
QUIET	790	m^3/h	1300
		l/s	361
		CFM	765

●Heating

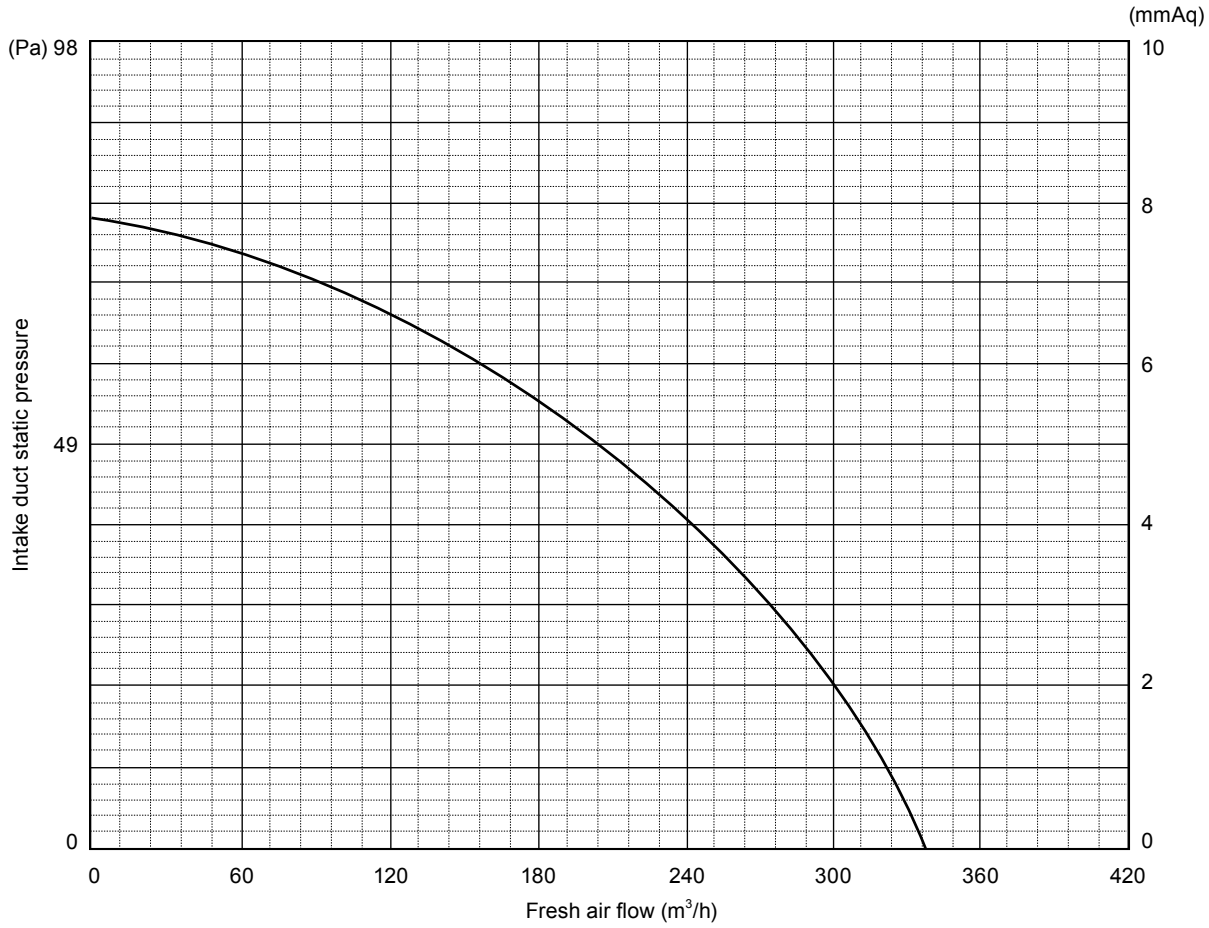
Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1340	m^3/h	2300
		l/s	639
		CFM	1354
MED	1150	m^3/h	1950
		l/s	542
		CFM	1148
LOW	950	m^3/h	1600
		l/s	444
		CFM	942
QUIET	790	m^3/h	1300
		l/s	361
		CFM	765

INDOOR UNIT (SINGLE)

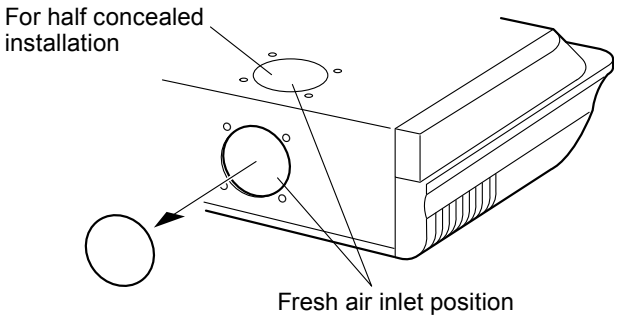
7-4-3. FRESH AIR CHARACTERISTIC

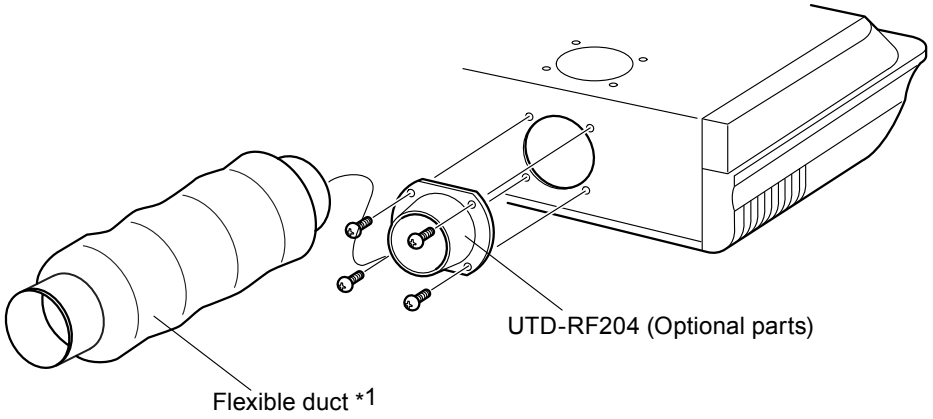
■ MODEL: AB∗G36LR, AB∗G45LR, AB∗G54LR

● Air flow volume - Static pressure of Fresh air intake characteristic



● Installation





*1: Locally procured parts

8. OPERATION NOISE

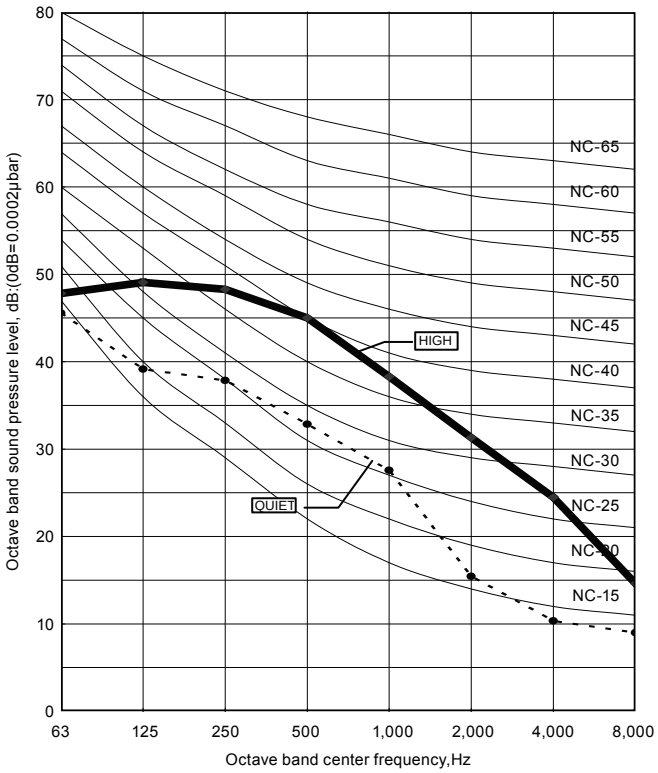
8-1. NOISE LEVEL CURVE

8-1-1. CASSETTE TYPE

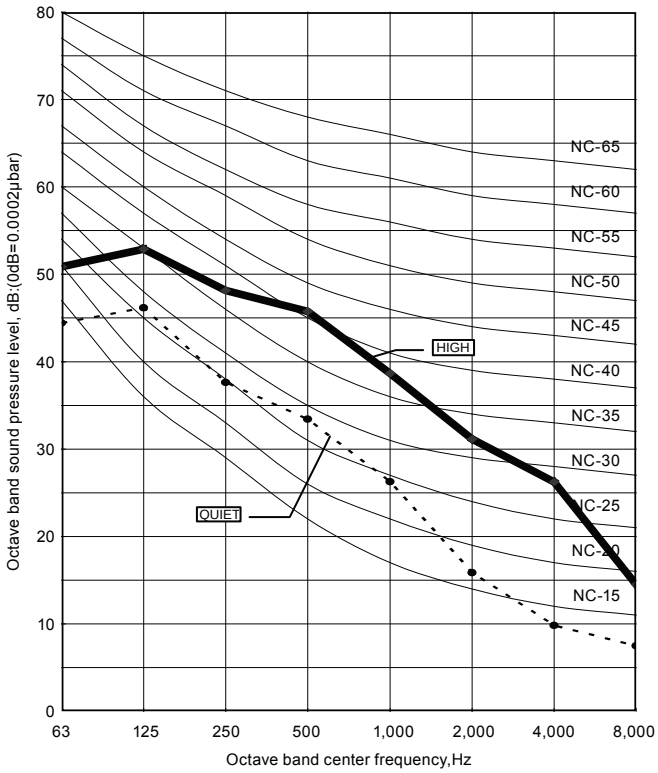
Condition
Ceiling mode : Standard
Air outlet : 4-way air outlet

■ MODEL: AU∗G36LR

● Cooling

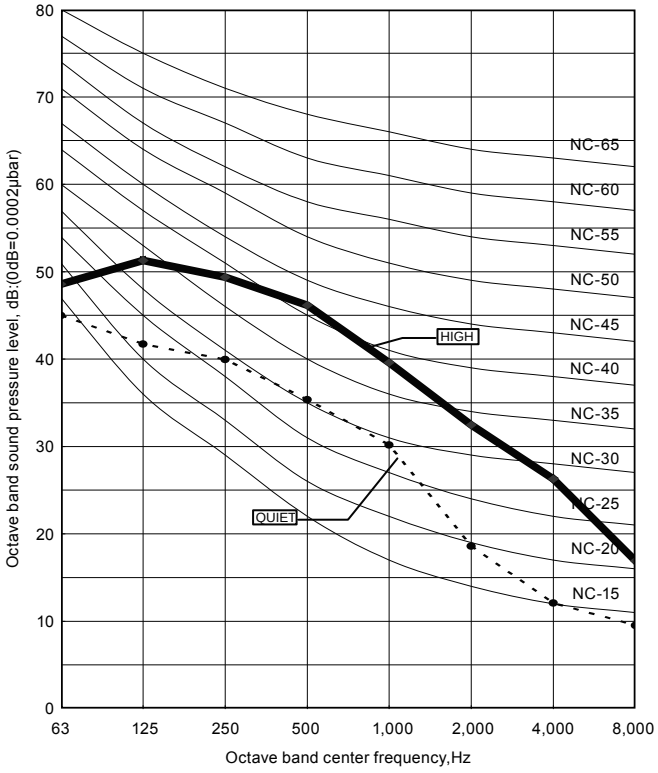


● Heating

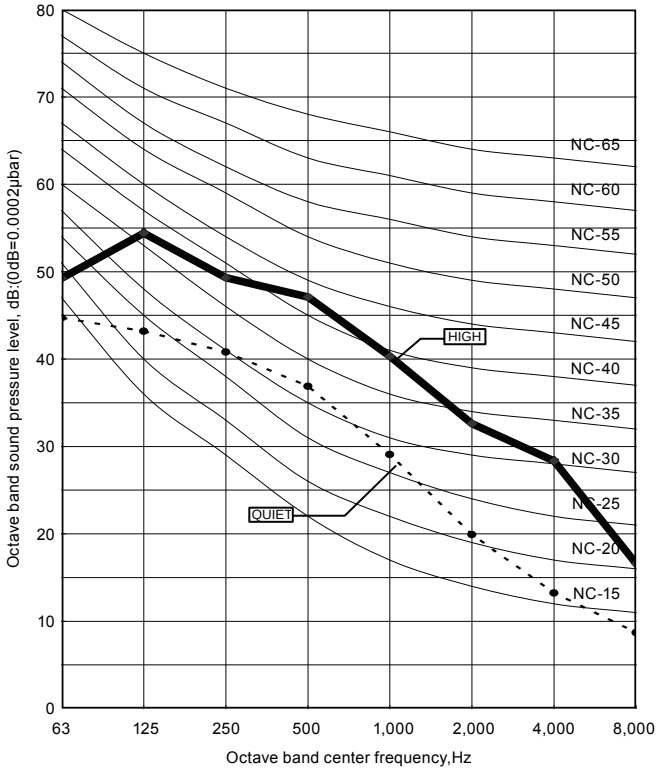


■ MODEL: AU∗G45LR

● Cooling



● Heating

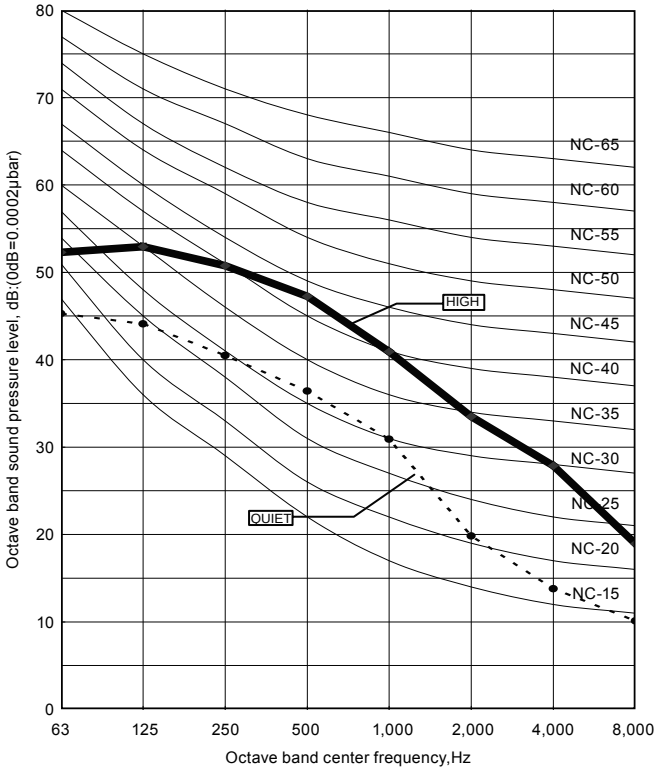


INDOOR UNIT (SINGLE)

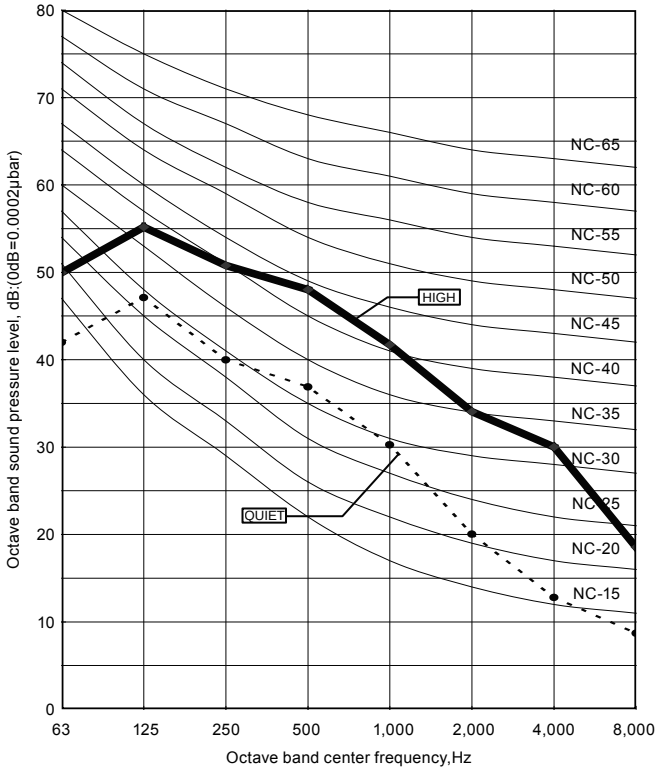
Condition
Ceiling mode : Standard
Air outlet : 4-way air outlet

■MODEL: AU∗G54LR

●Cooling



●Heating



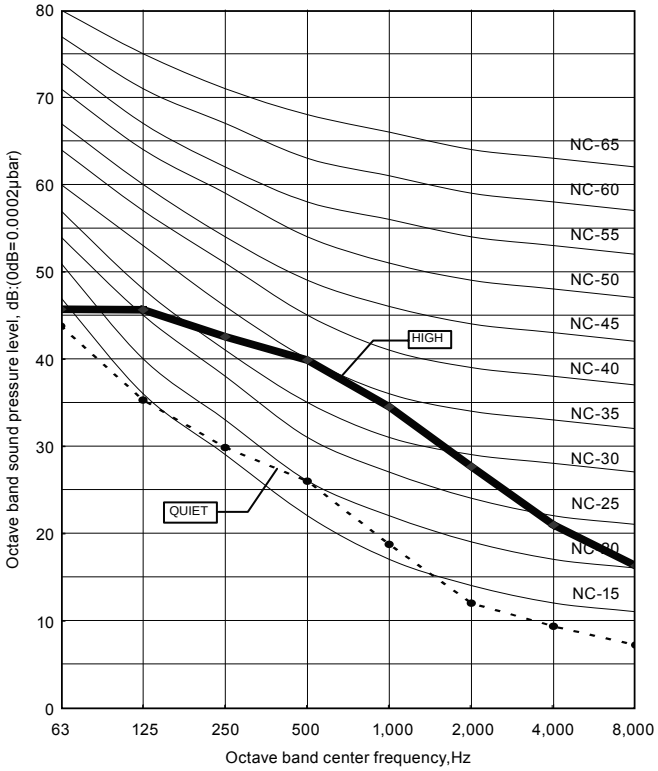
INDOOR UNIT (SINGLE)

8-1-2. DUCT TYPE

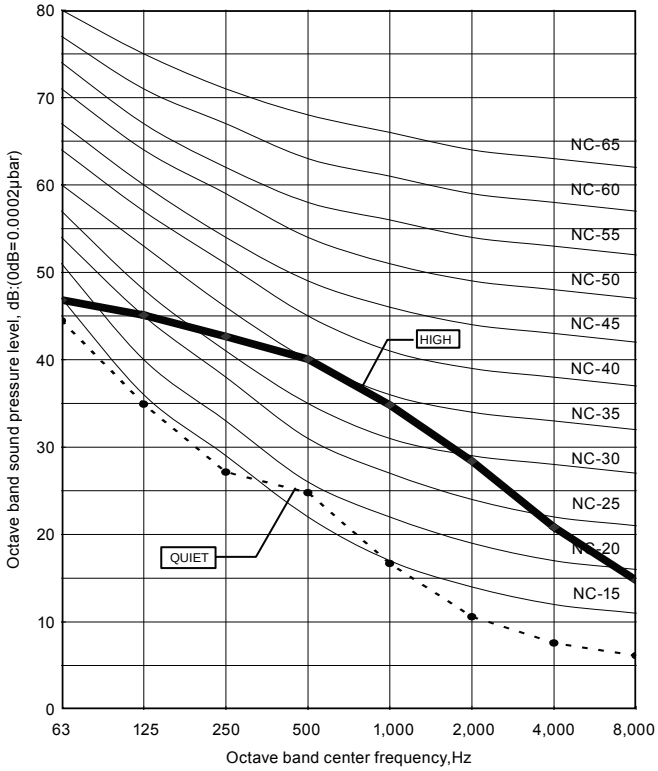
■MODEL: AR∗G36LM

Condition
Static pressure : 47Pa
Static pressure mode : Normal

●Cooling



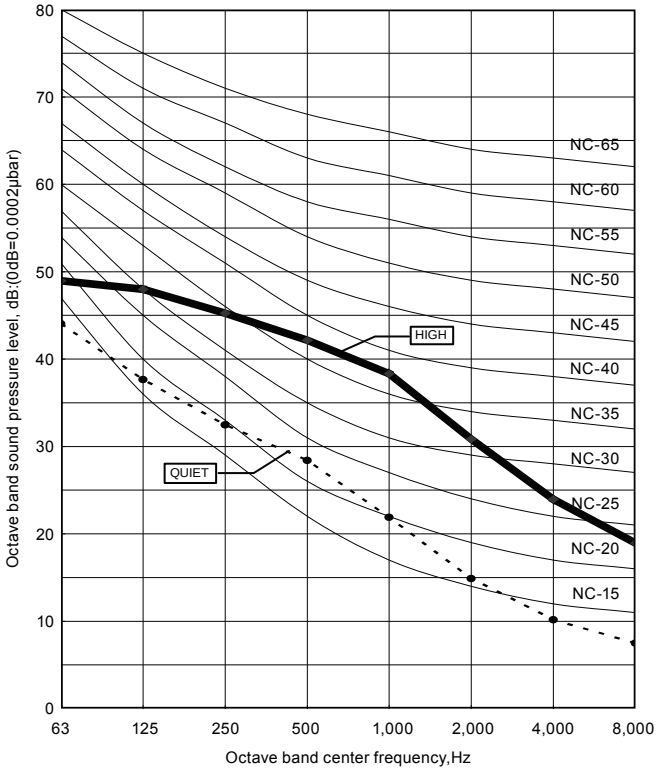
●Heating



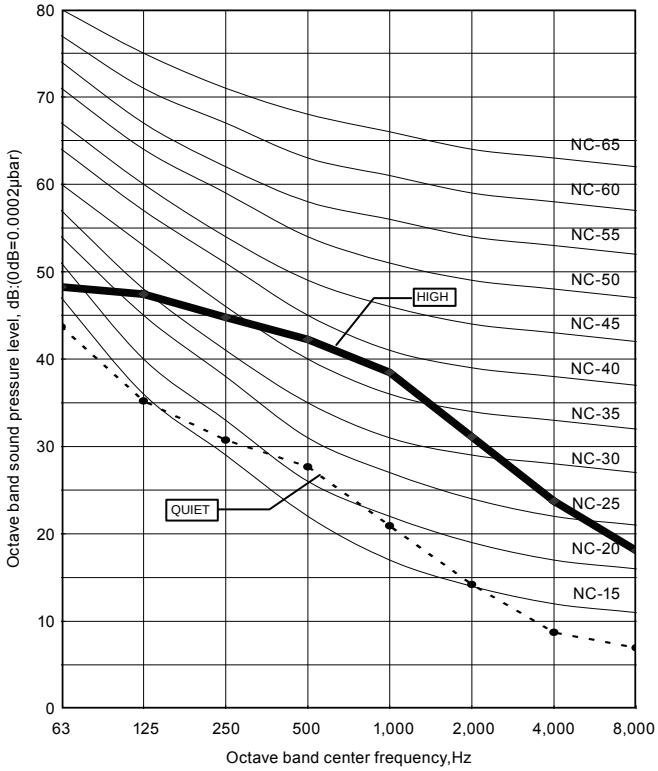
■MODEL: AR∗G45LM

Condition
Static pressure : 60Pa
Static pressure mode : High static pressure mode 1

●Cooling



●Heating

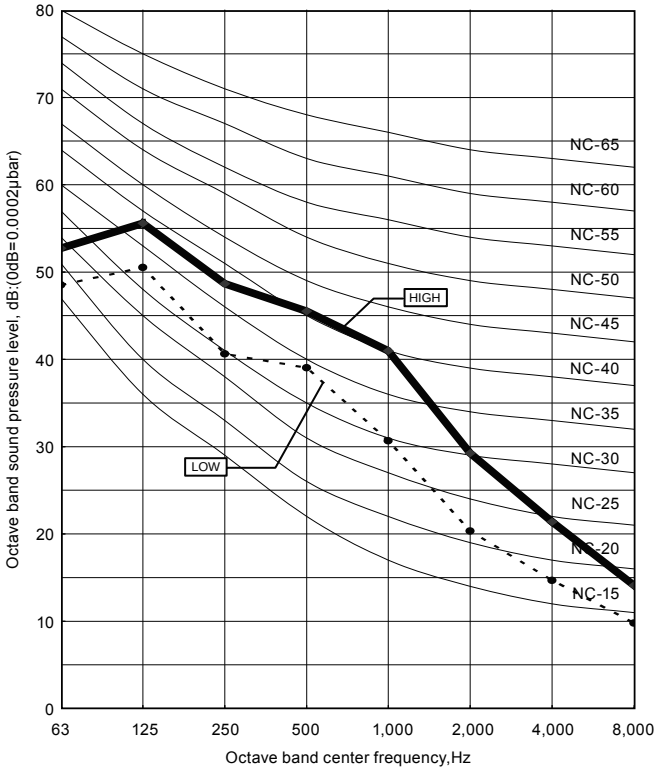


8-1-3. HIGH STATIC PRESSURE DUCT TYPE

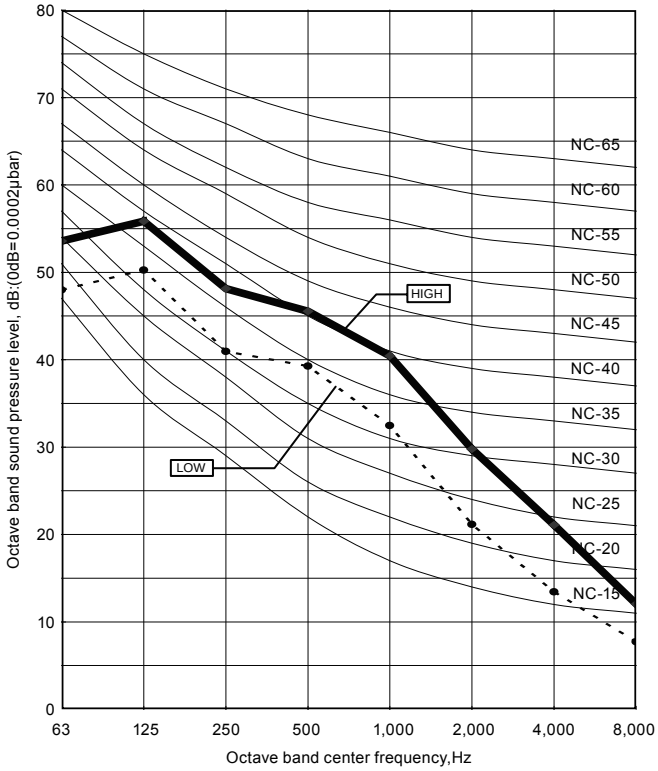
Condition
Static pressure : 100Pa

■MODEL: AR∗G45LH

●Cooling

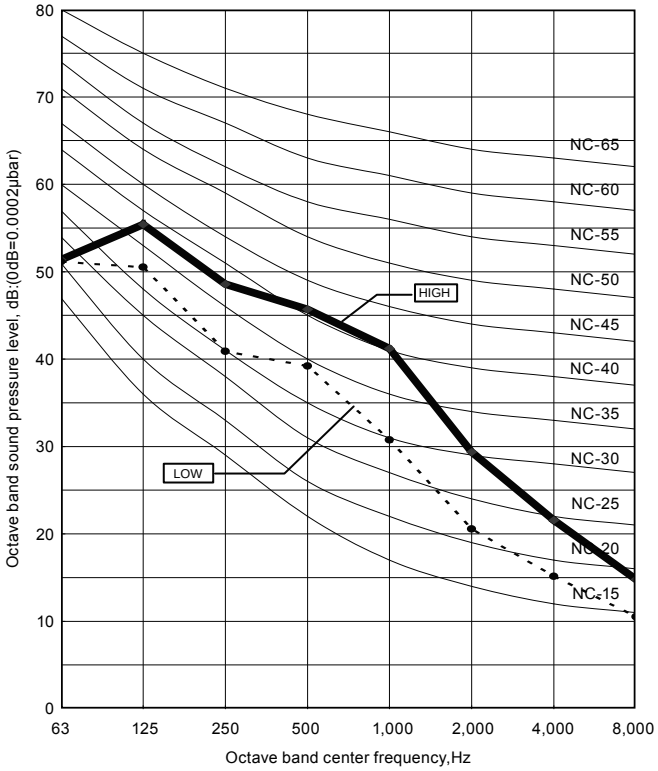


●Heating

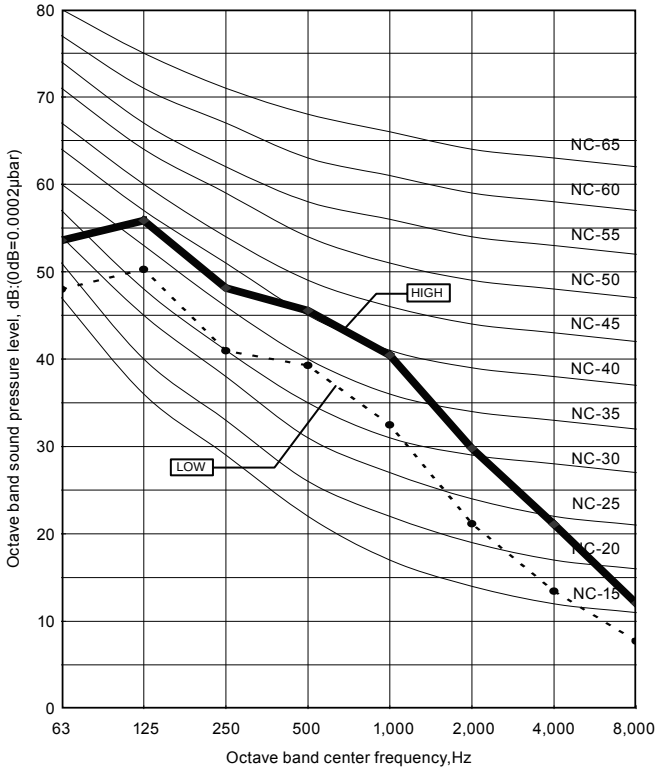


■MODEL: AR∗G54LH

●Cooling



●Heating

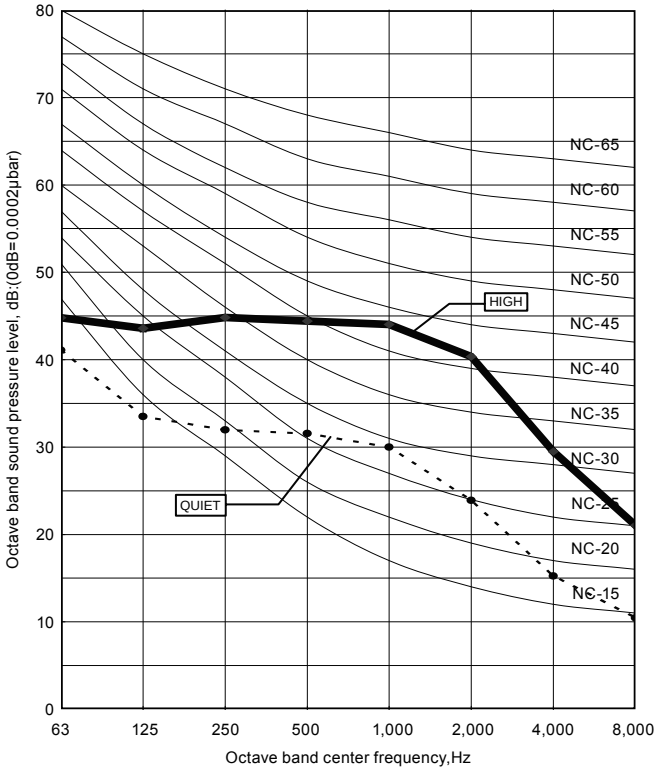


INDOOR UNIT (SINGLE)

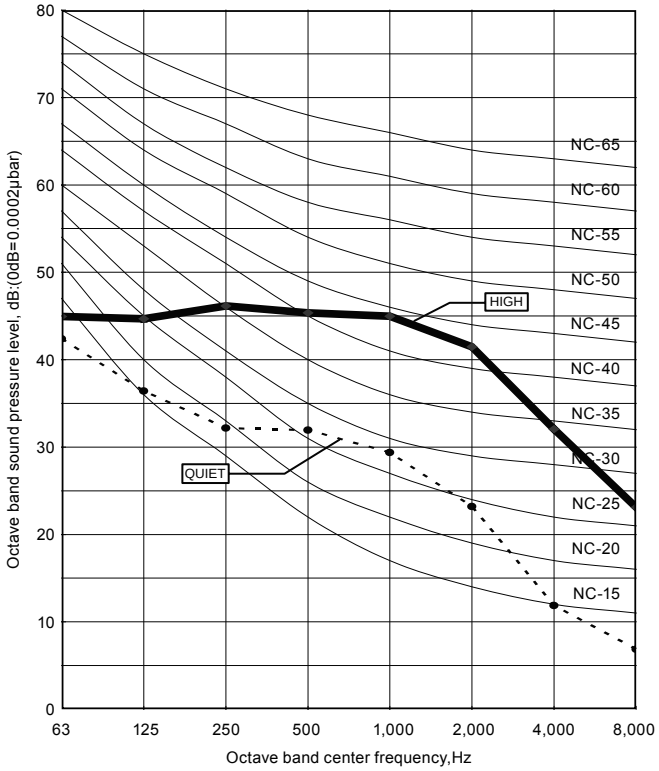
8-1-4. CEILING TYPE

■MODEL: AB∗G36LR

●Cooling

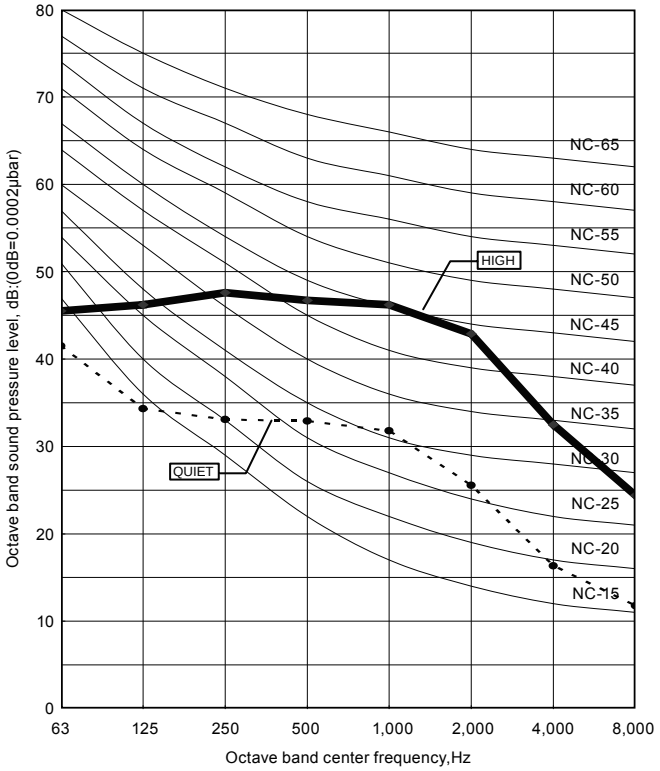


●Heating

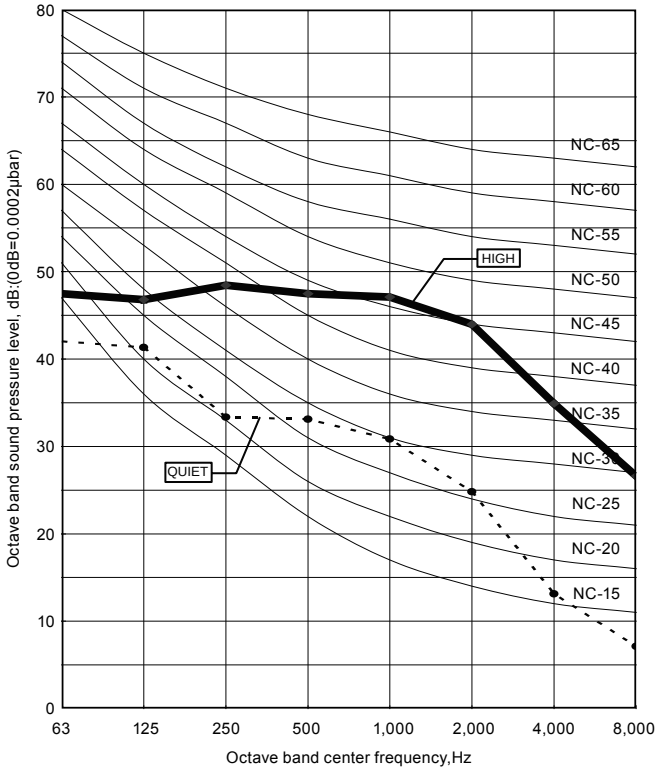


■MODEL: AB∗G45LR

●Cooling



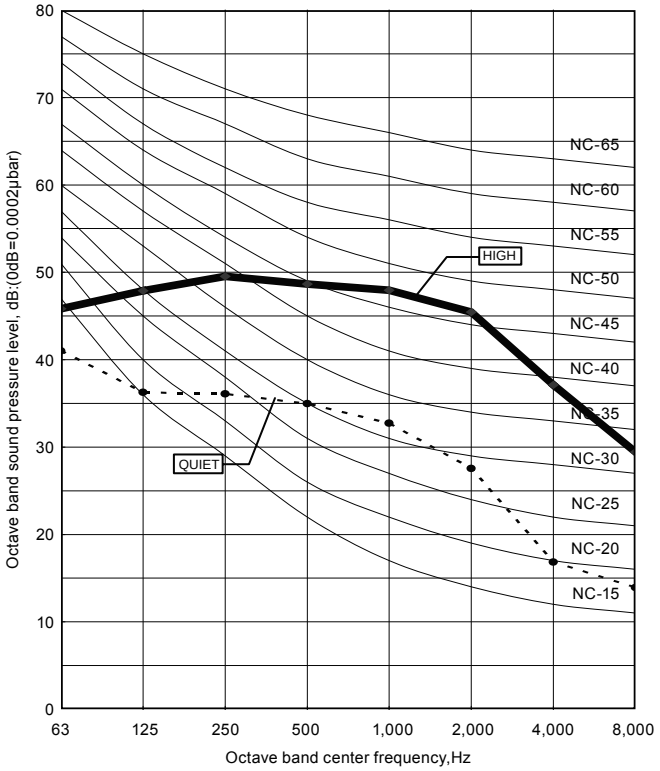
●Heating



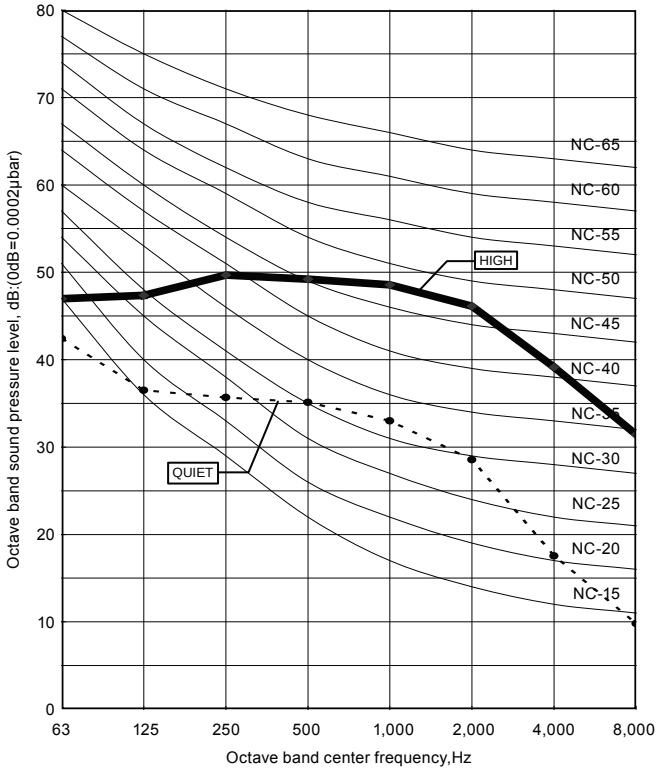
INDOOR UNIT (SINGLE)

■MODEL: AB∗G54LR

●Cooling



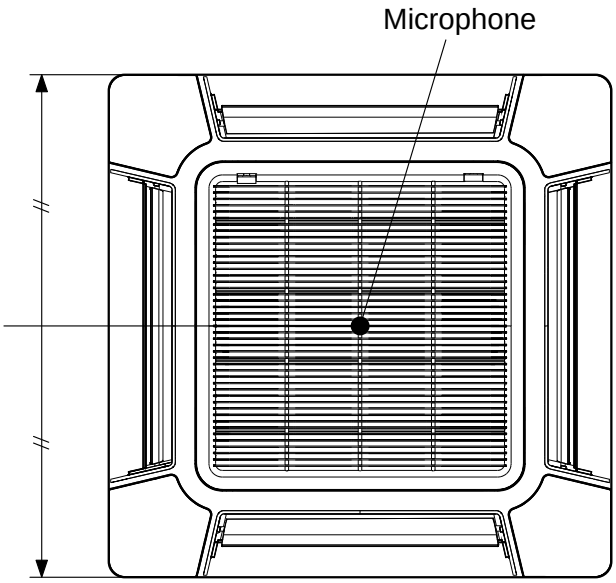
●Heating

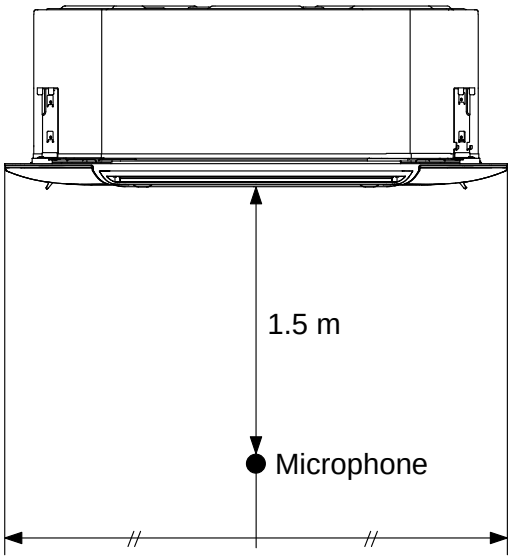


INDOOR UNIT
(SINGLE)

8-2. SOUND LEVEL CHECK POINT

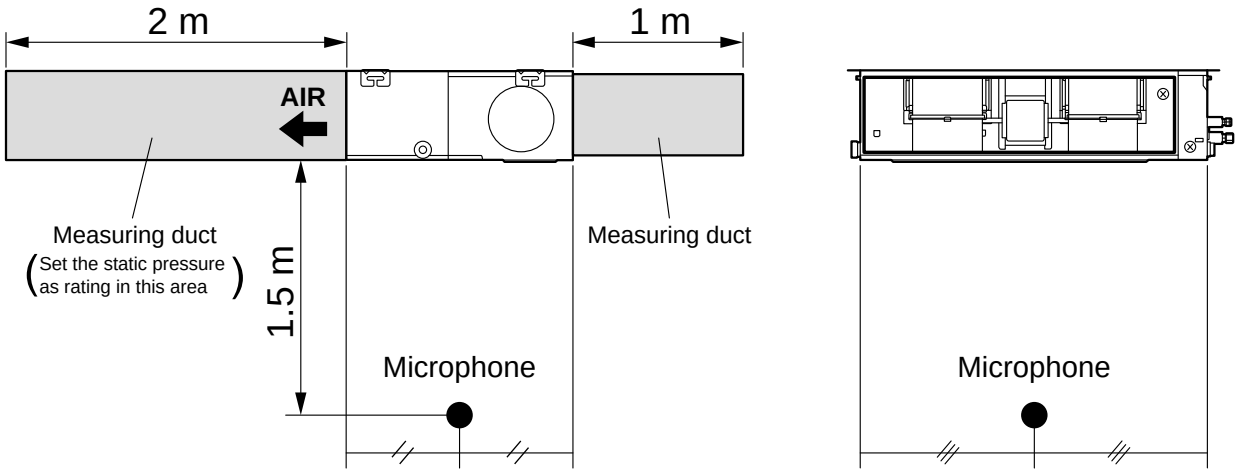
■ CASSETTE TYPE



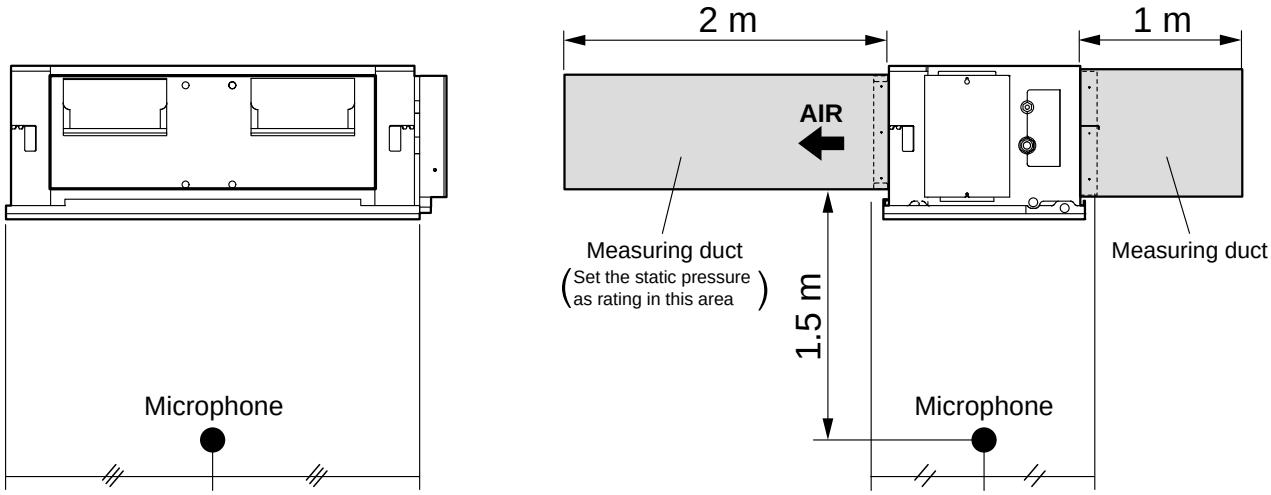


INDOOR UNIT (SINGLE)

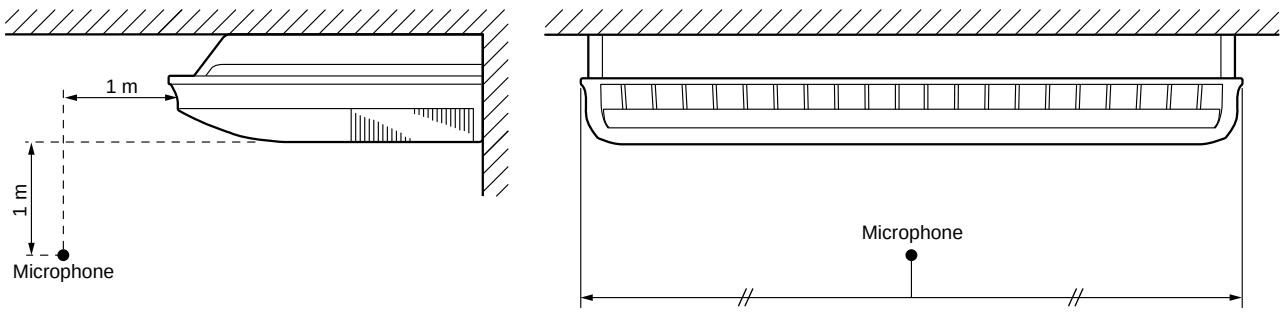
■ DUCT TYPE



■ HIGH STATIC PRESSURE DUCT TYPE



■ CEILING TYPE



9. ELECTRIC CHARACTERISTICS

Indoor unit		Power supply		Max. operating current (Indoor unit) (A)	Wiring specification (Indoor unit to outdoor unit)	
Type	Model name	Voltage (V)	Frequency (Hz)		Connection cable (mm^2)	Limited wiring length (m)
CASSETTE	AU∗G36LR	230 ~	50	1.1	1.5 (Min.)	75
	AU∗G45LR			1.2		
	AU∗G54LR			1.2		
DUCT	AR∗G36LM	230 ~	50	2.0	1.5 (Min.)	75
	AR∗G45LM			2.1		
HIGH STATIC PRESSURE DUCT	AR∗G45LH	230 ~	50	4.0	1.5 (Min.)	75
	AR∗G54LH					
CEILING	AB∗G36LR	230 ~	50	0.7	1.5 (Min.)	75
	AB∗G45LR			0.8		
	AB∗G54LR			1.0		

Note : Wiring specification

1. Selected sample
   (Selected based on Japan Electrotechnical Standard and Codes Committee E0005)
2. Limited wiring length: Limit voltage drop to less than 2%. Increase cable gauge if voltage drop is 2% or more.
3. If the transmission wire is longer than 50m, use the bigger conductor size.

10. SAFETY DEVICES

INDOOR UNIT (SINGLE)

Indoor unit		Circuit protection	Fan motor protection	
Type	Model name	Current fuse (PCB)	Current fuse	Thermal protection program
CASSETTE	AU∗G36LR	250V 3.15A	-	OFF: 110^{+15}_{-10} °C ON: 105^{+15}_{-10} °C
	AU∗G45LR			
	AU∗G54LR			
DUCT	AR∗G36LM	250V 3.15A	-	OFF: 115±15 °C ON: 70 °C or less
	AR∗G45LM			
HIGH STATIC PRESSURE DUCT	AR∗G45LH	250V 3.15A	250V 10A	OFF: 145±5 °C ON: 95±15 °C
	AR∗G54LH			
CEILING	AB∗G36LR	250V 3.15A	-	OFF: 135±15 °C ON: 115±15 °C
	AB∗G45LR			
	AB∗G54LR			

Refrigerant R410A
INVERTER

AIR CONDITIONER

3 phase type

Single / Simultaneous multi system

3. INDOOR UNITS (SIMULTANEOUS MULTI)

DTR_SSM001E_03--CHAPTER03
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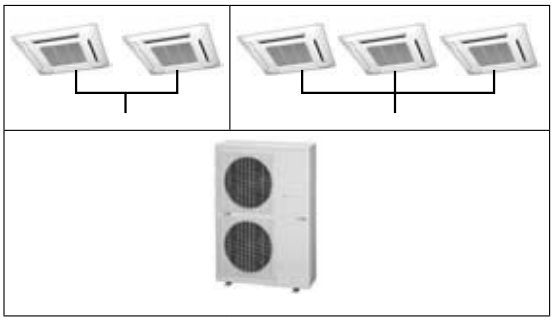
1. FEATURES

1-1. COMPACT CASSETTE TYPE

■ MODEL

INDOOR UNIT		OUTDOOR UNIT
TWIN	**AU∗G18LVLB × 2**	**AO∗G36LATT**
	AU∗G22LVLA × 2	**AO∗G45LATT**
	AU∗G24LVLA × 2	**AO∗G54LATT**
TRIPLE	**AU∗G18LVLB × 3**	



■ FEATURES

● Energy efficiency class

	MODEL
	AU∗G18LVLB × 2
Cooling	A+
Heating	A+

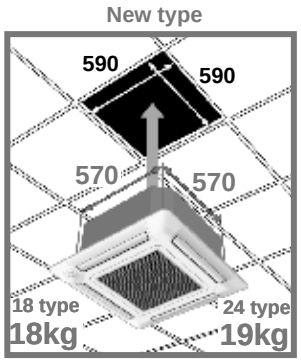
● Advancement in comfort

- Quiet operation was realized by adoption of new type turbo fan
- Improvement of air stream

● Improvement of installation & maintenance

- COMPACT DESIGN

Fits the European size ceiling.



INDOOR UNITS (SIMULTANEOUS MULTI)

● Easy maintenance

①Maintenance of fan motor and fan

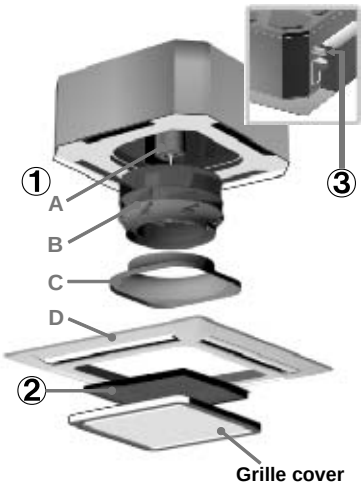
Maintenance of fan motor and fan can be done easily after taking off the panel, since bell-mouth can be removed easily

A : Fan motor

B : 2 stage turbo fan

C : Bell-mouth

D : Panel



②Long life filter

: standard equipment

③Adaptation of transparent drainage parts

Easy check of operation of drain-up kit when you install

● Easy installation

New type

● Economy operation

The power consumption can be reduced.

■ FUNCTION SETTING

● Outlet direction selection

• Performs operation matched to the number of outlets when 4 directions are unnecessary and outlets are blocked when the ceiling cassette is installed in a corner, etc.

4-way direction **3-way direction**

4-way direction mode: Set when there are 4 outlets (shipped state).

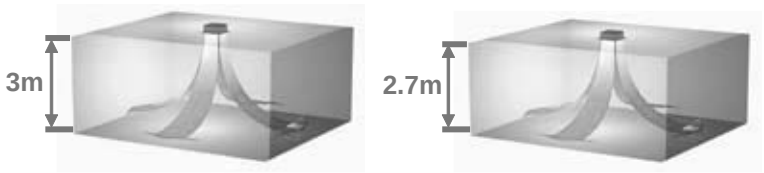
3-way direction mode: Set when there are 3 outlets.

● Ceiling switching function

Air reaches sufficiently up to 3m height, even it is compact cassette type.

Also delivers air to high ceilings by selecting the mode and raising the air flow according to the height of the ceiling.

High ceiling (Mode 1) **Standard ceiling (Standard)**



Standard...Operates at normal air flow.

Mode 1 ...Air flow becomes greater than normal.

● Cooling room temperature correction

● Heating room temperature correction

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

● Room temperature sensor switching

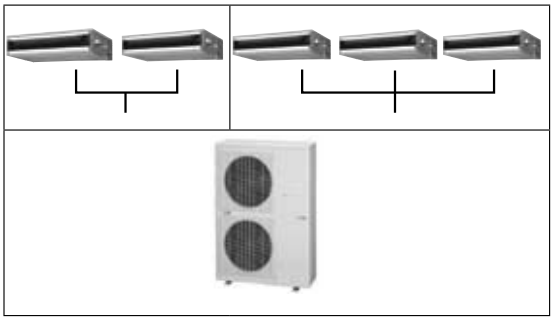
Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

INDOOR UNITS (SIMULTANEOUS MULTI)

1-2. SLIM DUCT TYPE

■ MODEL

INDOOR UNIT		OUTDOOR UNIT
TWIN	**AR∗G18LLTB × 2**	**AO∗G36LATT**
TRIPLE	**AR∗G18LLTB × 3**	**AO∗G54LATT**



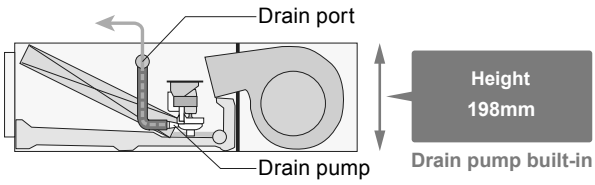
■ FEATURES

● Energy efficiency class

	MODEL
	AR∗G18LLTB × 2
Cooling	A+
Heating	A+

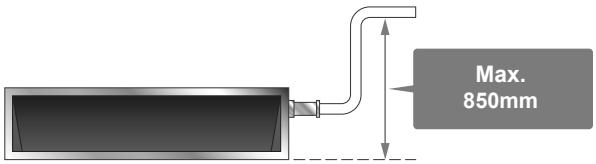
● Slim design

This model is slim design, it can install at the place where a ceiling is narrow.



● Compact design

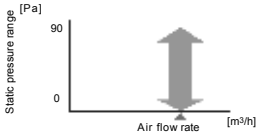
Condensate lift-up to 850mm.



Drain hose is standard accessory

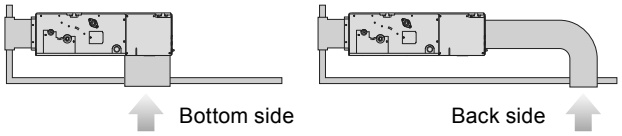
● Selectable with a wide range of static pressure

By using DC fan motor, it is possible to change of static pressure range 0 to 90Pa. The change of static pressure range is possible by remote controller.

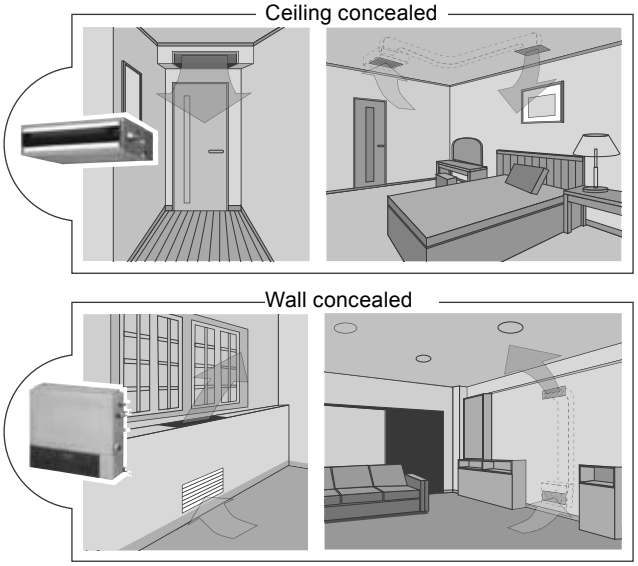


● Air - intake

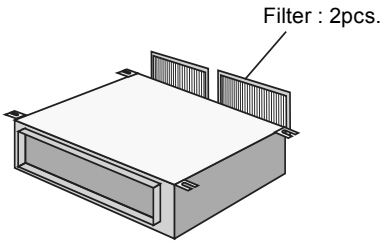
Air intake direction can be selected to match the installation site.



● Flexible installation



● Filter (Accessory)



● Economy operation

The power consumption can be reduced.

■ FUNCTION SETTING

● Static pressure mode setting

Air flow, noise, etc. can be used under the optimum conditions by selecting the static pressure mode matched to the installation conditions.

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

● Auto restart

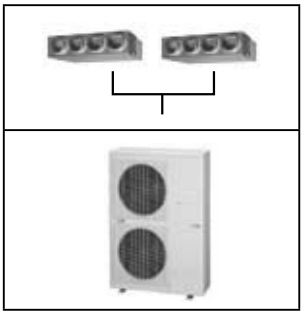
The units restart automatically when the current was returned even when there was a power interruption during operation.

● Cooling room temperature correction

● Heating room temperature correction

INDOOR UNITS
(SIMULTANEOUS MULTI)

1-3. DUCT TYPE



■ MODEL

INDOOR UNIT		OUTDOOR UNIT
TWIN	**AR∗G22LMLA × 2**	**AO∗G45LATT**
	AR∗G24LMLA × 2	**AO∗G54LATT**

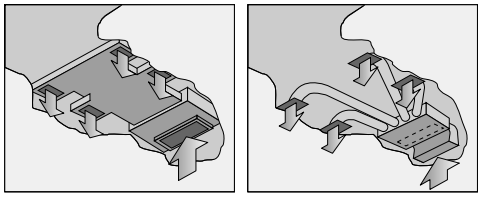
■ FEATURES

● Energy saving

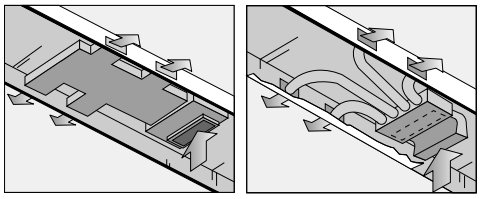
High energy saving was realized by making the indoor unit and outdoor unit fan motor and compressor all DC and optimal design of the refrigerant cycle.

● Installation styles

Embedded in Ceiling

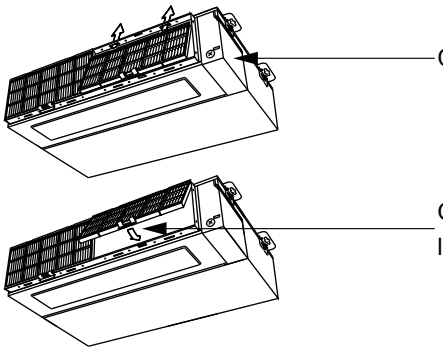


Hanging from Ceiling



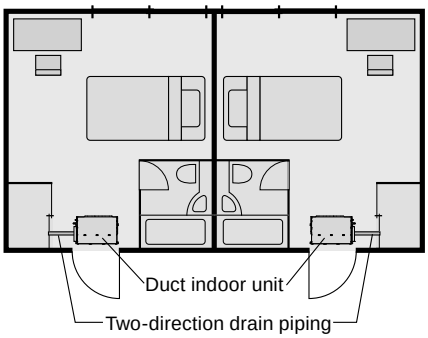
● Slim & compact design

In the case of bottom suction type, as seen from lower rear part.



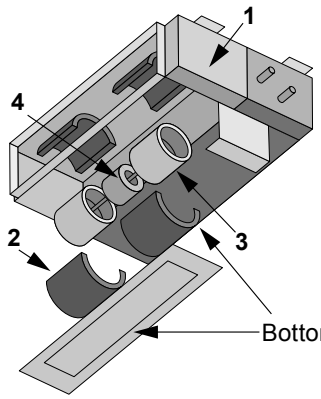
In addition to the slim height of 270 mm which is our sales point, further compactification is attained by reducing 65 mm from the width with the flanking control box embedded inside the chassis.

● Two-direction drain piping



● Easy maintenance

It can easily access the fan and the motor by the divided panel structure.



1. Control box
2. Fan casing
3. Fan
4. Motor

Structural improvement is attained by making the bottom panel two pieces, front and rear.

The internal fan casing is also manufactured in two pieces, namely upper and lower. The maintenance of the motor and fan can be easily carried out by removing the rear panel and the lower part of the casing while leaving the main chassis installed.

INDOOR UNITS (SIMULTANEOUS MULTI)

● Quiet operation

Quiet operation can be performed in quiet mode.

● Economy operation

The power consumption can be reduced.

■ FUNCTION SETTING

● Static pressure mode setting

Air flow, noise, etc. can be used under the optimum conditions by selecting the static pressure mode matched to the installation conditions.

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

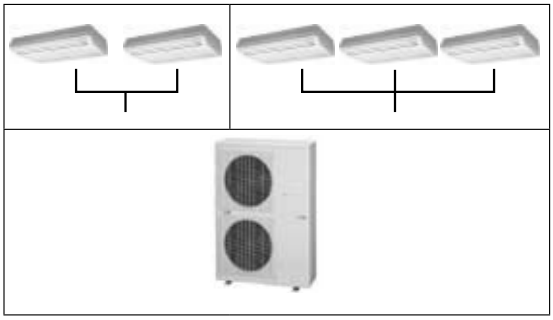
● Cooling room temperature correction

● Heating room temperature correction

1-4. FLOOR / CEILING TYPE

■ MODEL

INDOOR UNIT		OUTDOOR UNIT
TWIN	**AB∗G18LVTB × 2**	**AO∗G36LATT**
	AB∗G22LVTA × 2	**AO∗G45LATT**
	AB∗G24LVTA × 2	**AO∗G54LATT**
TRIPLE	**AB∗G18LVTB × 3**	



■ FEATURES

● Energy efficiency class

	MODEL
	AB∗G18LVTB × 2
Cooling	A+
Heating	A+

● Quiet operation

Air flow mode can be set in 4 steps and more detailed air flow setting is possible.

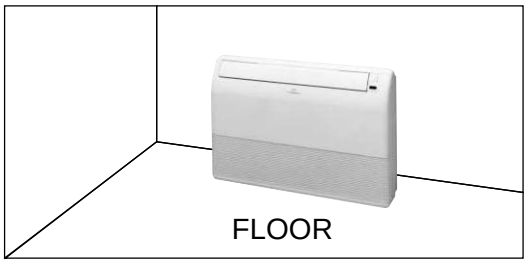
● Economy operation

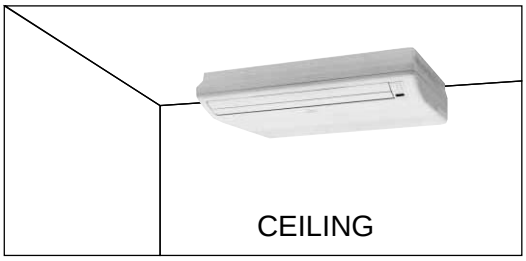
The power consumption can be reduced.

● Wired/wireless simultaneous use possible

Wired remote controller and wireless remote controller can be simultaneously used.

● Flexible installation

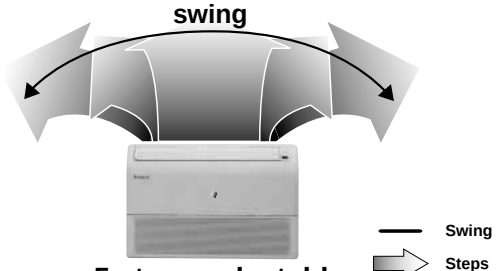




● Double auto swing

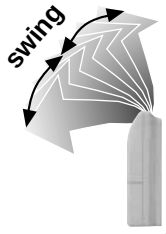
Combination of up/down and right/left air direction swing allows three-dimensional air direction Since up/down air direction flaps operate automatically, according to the operating mode of the unit, it is possible to set the air direction based on the operating mode. control.

RIGHT and LEFT



5 steps selectable

UP and DOWN



7 steps selectable

■ FUNCTION SETTING

● Ceiling switching function (standard/high ceiling)

Also delivers air to high ceilings by selecting the mode and raising the air flow according to the height of the ceiling.

Standard ...Operates at normal air flow.

Mode 1 ...Air flow becomes greater than normal.

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

● Cooling room temperature correction

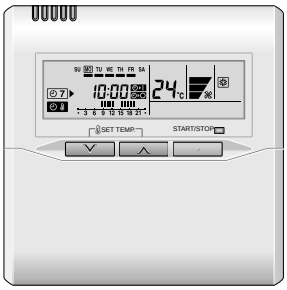
● Heating room temperature correction

INDOOR UNITS (SIMULTANEOUS MULTI)

2. REMOTE CONTROLLER

2-1. WIRED REMOTE CONTROLLER

■ FEATURES



- Various timer setup (ON/OFF/WEEKLY) are possible.
- Equipped with weekly timer as standard function. (Start/Stop function is twice per day for a week)
- When setting up a timer, start/stop and a temperature setup can be changed.
- When a failure occurs,the error code is displayed.
- Error history.(Last 16 error codes can be accessed.)
- Up to 16 indoor units can be simultaneously controlled.
- The room temperature can be controlled by being detective the temperature accurately with Built-in thermo sensor.

● Simple function setting

Setting of the air conditioner selection function is performed by remote controller.

● Powerful features and compact size

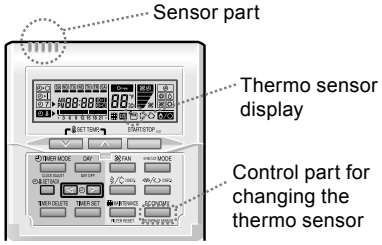
Individual control + Thermo sensor + Weekly timer + Setback timer = Wired remote controller

● Accurate and comfortable

Indoor temperature can be detected accurately by the inclusion of a thermo sensor in the body of the wired controller.

Our system can correspond to various scenes.

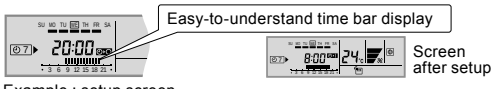
This wired remote controller and the optional remote sensor allows flexibility in sensor location, and suitable for all requirements.



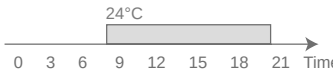
● Built-in timers

Weekly timer

Possible to set ON/OFF time to operate twice each day of the week.



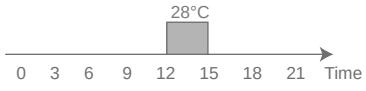
Example : setup screen
(Set to Wednesday: 8:00 to 20:00.)



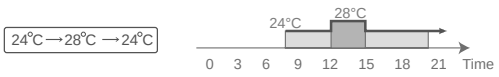
Set back timer

Possible to set temperature for two time spans and for each day of the week.

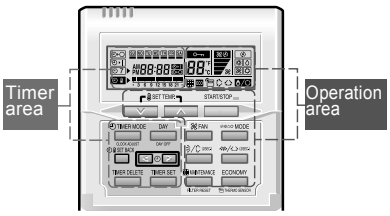
Example : setup screen
(Set from Sunday to Saturday: 12:00 to 15:00, 28 °C.)



At "Weekly timer" + "Set back timer" setup



● Easy-to-understand operation

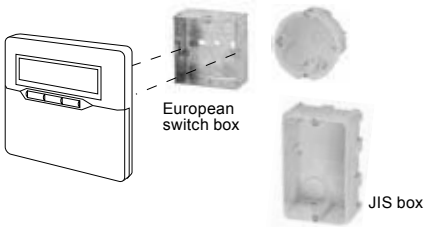


[Variable timer control]

The operation/display sections are zoned according to time and operation, enabling variable programming to match application.

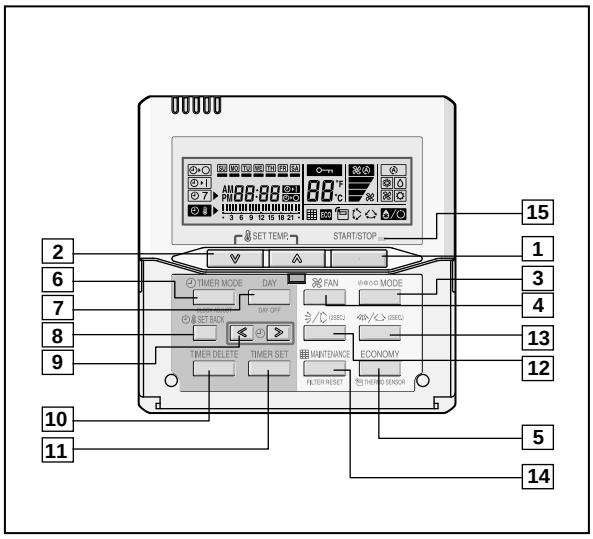
● Simple installation

Components are compatible with standard switch boxes. Flat back surface allows equipment to be installed wherever it is needed.

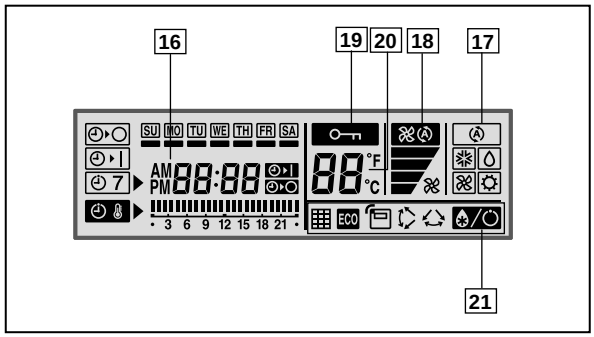


INDOOR UNITS (SIMULTANEOUS MULTI)

■ FUNCTIONS



Display panel



1 START/STOP button
Pressed to start and stop operation.

2 SET TEMP. button
Selects the setting temperature.

3 MODE button
Selects the operating mode(AUTO, HEAT, FAN, COOL, DRY).

4 FAN button
Selects the fan speed (AUTO, QUIET, LOW, MED, HIGH).

5 ECONOMY (THERMO SENSOR) button
Turns the economy efficient mode on and off.

6 TIMER MODE (CLOCK ADJUST) button
Selects the timer mode (OFF TIMER, ON TIMER, WEEKLY TIMER). Set the current time.

7 DAY (DAY OFF) button
Temporarily cancels of one day timer.

8 SET BACK button
Pressed to select the set back timer.

9 Set time button
Pressed to set time.

10 TIMER DELETE button
The schedule of a weekly timer is deleted.

11 TIMER SET button
Sets the date, hour, minute and on-off time.

12 Vertical airflow direction and swing button
Push for two seconds to change the swing mode.

13 Horizontal airflow direction and swing button
Push for two seconds to change the swing mode.

14 FILTER RESET button

15 Operation lamp
Lights during operation and when the timer is on.

16 Timer and clock display

17 Operation mode display

18 Fan speed display

19 Operation lock display

20 Temperature display

21 Function display

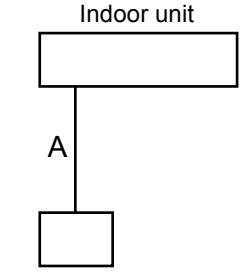
- Defrost display
- Thermo sensor display
- Economy display
- Vertical swing display
- Horizontal swing display
- Filter display

Note: Functions will be different due to type of indoor unit.
For details, please see operation manual.

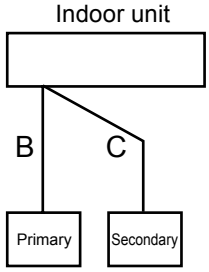
INDOOR UNITS (SIMULTANEOUS MULTI)

■ SYSTEM DIAGRAM

● 1-remote controller



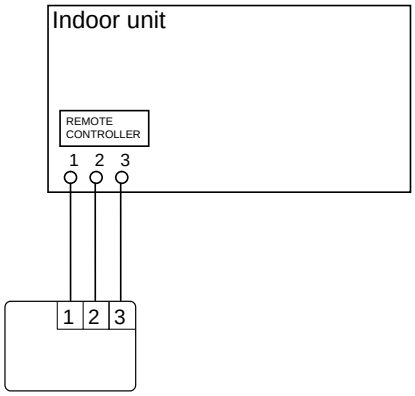
● 2-remote controllers



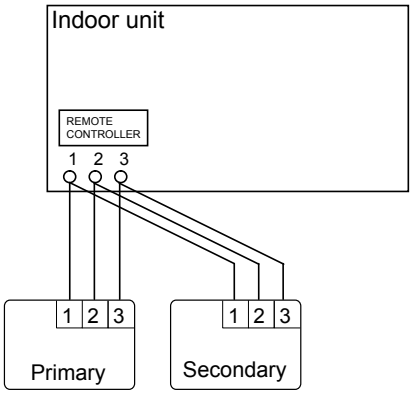
A , B , C : Remote controller cable.
Refer to next page
for detail specifications.
A ≦500m ; B+C ≦500m

■ ELECTRICAL WIRING

● 1-remote controller



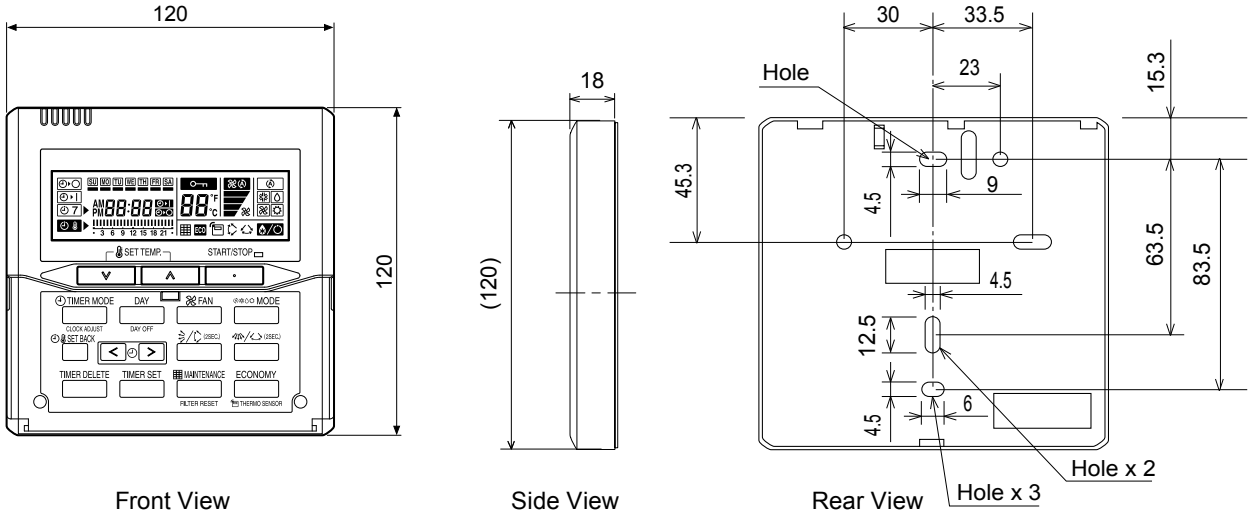
● 2-remote controllers



1 (RED) : 12V
2 (WHITE) : Signal
3 (BLACK) : COM

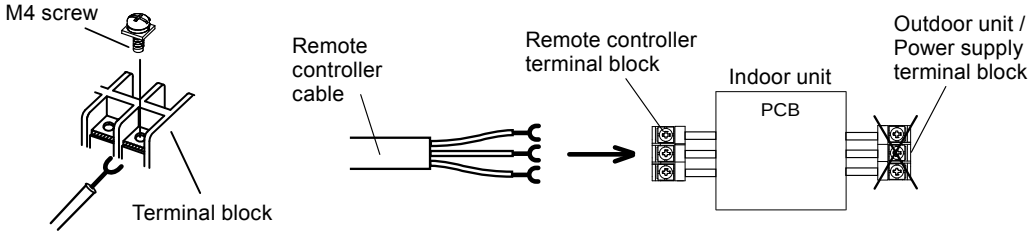
■ DIMENSION

[Unit : mm]



■ INSTALLATION

Connect the end of remote controller cable directly to the exclusive terminal block.



Note: It may be failed if it is connected to the outdoor unit or the terminal block for power supply.

■ PACKING LIST (ACCESSORIES)

Name and shape	Quantity	Application
Remote controller cable (10 m)*	1	For connecting the remote controller
Tapping screw (M4 x 16mm)	2	For installing the remote controller
Cable tie	1	For remote controller and remote controller cable binding
Installation manual	1	
Operation manual	1	

* : If necessary , use shielded cable (Field supplied) in accordance with the standard of the country.

■ WIRING SPECIFICATIONS

Use	Size	Wire type	Remarks
Remote controller cable	0.33mm^2 (22 AWG)	Polar 3 core	Use sheathed PVC cable

■ SPECIFICATIONS

SIZE	(H x W x D mm)	120 x 120 x 18
WEIGHT	(g)	160

2-2. WIRELESS REMOTE CONTROLLER

■ FEATURES

- Four kinds of timer setup (ON / OFF / PROGRAM / SLEEP) are possible.
- Can be used jointly with wired remote controllers.
- Easy to change custom code (4 patterns).

● Built-in timers

Select from four different timer programs (ON / OFF / PROGRAM / SLEEP).

● Program timer

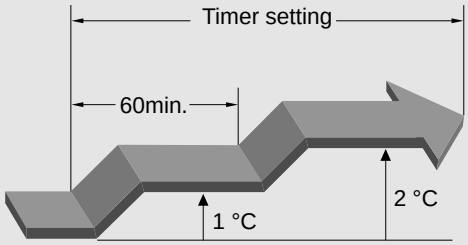
The program timer operates the ON and OFF timer once within a 24 hour period.

● Sleep timer

The sleep timer function automatically corrects the temperature thermostat setting according to the time setting to prevent excessive cooling and heating while sleeping.

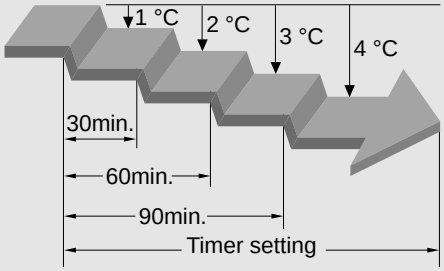
Cooling operation/dry operation

When the sleep timer is set, the set temperature automatically rises 1 °C every hour. The set temperature can rise up to a maximum of 2 °C.



Heating operation

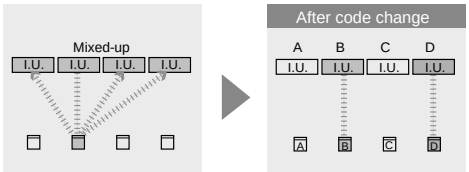
When the sleep timer is set, the set temperature automatically drops 1 °C every 30 minutes. The set temperature can drop to a maximum of 4 °C.



● Simple function setting

Setting of the air conditioner selection function is performed by remote controller.

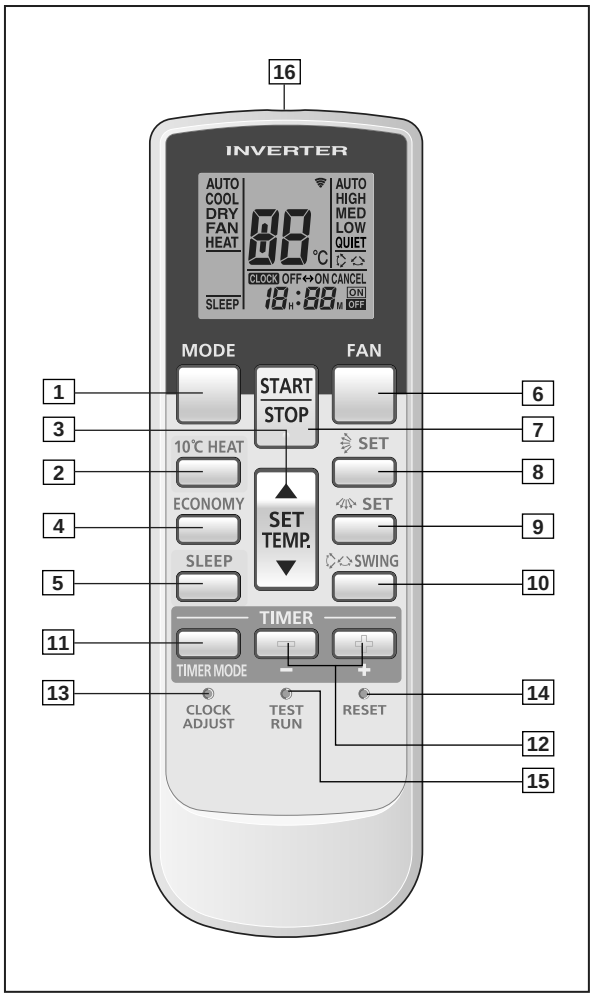
● Switching remote controller signal code



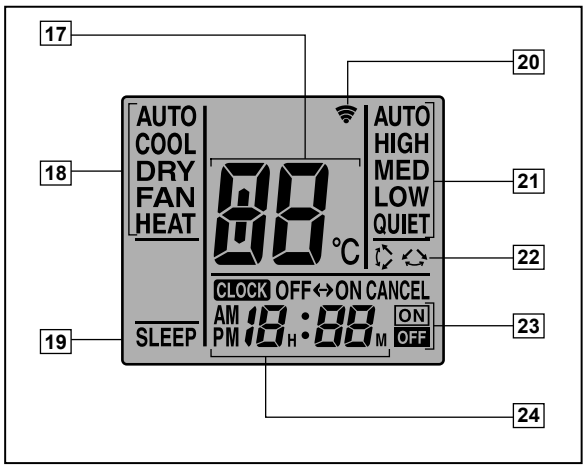
- Code selector switch eliminates unit being wrongly switched. (Up to 4 codes can be set.)

*I.U.=Indoor unit

■ FUNCTIONS



Display panel



1 **MODE button**
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT).
/Start / end R.C. signal code change. (Max 4 types)

2 **10°C HEAT button**
* In Simultaneous multi system, does not function.

3 **SET TEMP. button (▲ / ▼)**
Sets the indoor temp./ Sets R.C. signal code.

4 **ECONOMY button**

5 **SLEEP button**
Pressed to select sleep timer.

6 **FAN button**
Selects the fan speed (AUTO, HIGH, MED, LOW, QUIET).

7 **START/STOP button**
Pressed to start and stop operation.

8 **SET button (Vertical)**
Air flow direction vertical set button.

9 **SET button (Horizontal)**
Air flow direction horizontal set button.

10 **SWING button**
Air flow direction swing button.

11 **TIMER MODE button**
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)
* In Simultaneous multi system, does not function.

12 **TIMER SET (⊕ / ⊖) button**
Sets the current time and on-off time.
* In Simultaneous multi system, does not function.

13 **CLOCK ADJUST button**
Sets the current time.

14 **RESET button**
Used when replacing batteries.

15 **TEST RUN button**
Used when testing the air conditioner after installation.

16 **Signal transmitter**

17 **Temperature set display**

18 **Operating mode display**

19 **Sleep display**

20 **Transmit indicator**

21 **Fan speed display**

22 **Swing display**

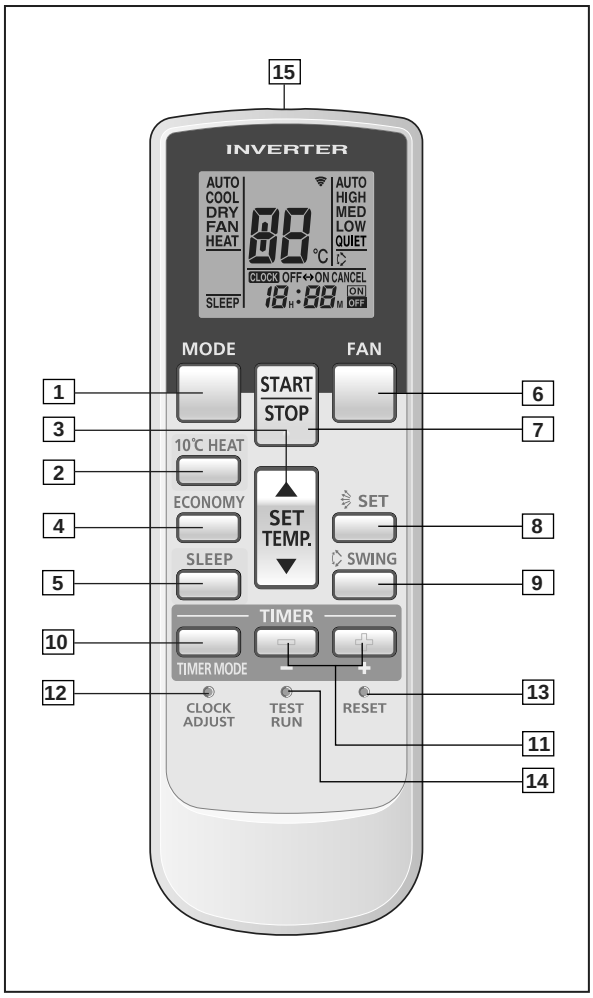
23 **Timer mode display**

24 **Clock display**

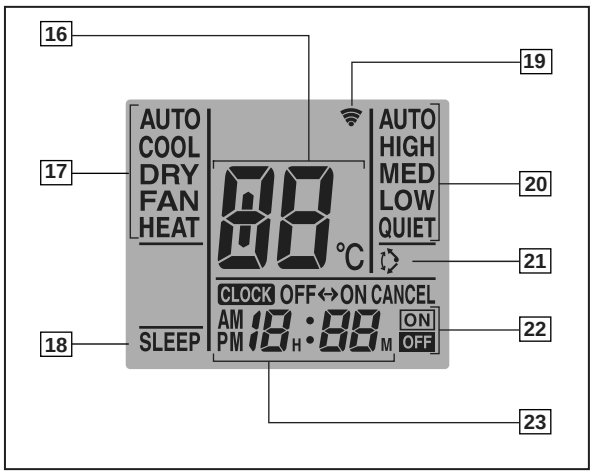
Note: Functions will be different due to type of indoor unit.
For details, please see operation manual.

INDOOR UNITS (SIMULTANEOUS MULTI)

■ FUNCTIONS (COMPACT CASSETTE TYPE ONLY)



Display panel



1 MODE button
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT). /Start / end R.C. signal code change. (Max 4 types)

2 10°C HEAT button

3 Set temp. button (▲ / ▼)
Sets the indoor temp./ Sets R.C. signal code.

4 ECONOMY button

5 SLEEP button
Pressed to select sleep timer.

6 FAN button
Selects the fan speed (AUTO, HIGH, MED, LOW, QUIET).

7 START/STOP button
Pressed to start and stop operation.

8 SET button (Vertical)
Air flow direction vertical set button.

9 SWING button
Air flow direction swing button.

10 TIMER MODE button
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)

11 TIMER SET ((+) / (-)) button
Sets the current time and on-off time.

12 CLOCK ADJUST button
Sets the current time.

13 RESET button
Used when replacing batteries.

14 TEST RUN button
Used when testing the air conditioner after installation.

15 Signal transmitter

16 Temperature set display

17 Operating mode display

18 Sleep display

19 Transmit indicator

20 Fan speed display

21 Swing display

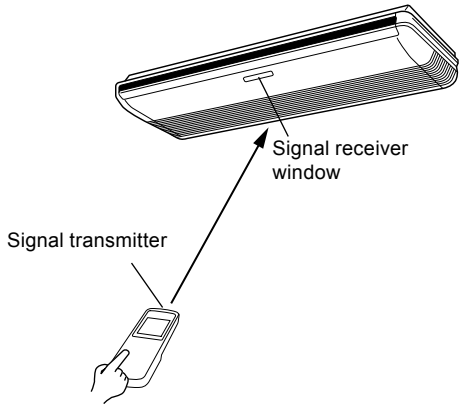
22 Timer mode display

23 Clock display

Note: Functions will be different due to type of indoor unit. For details, please see operation manual.

INDOOR UNITS (SIMULTANEOUS MULTI)

■ SYSTEM DIAGRAM

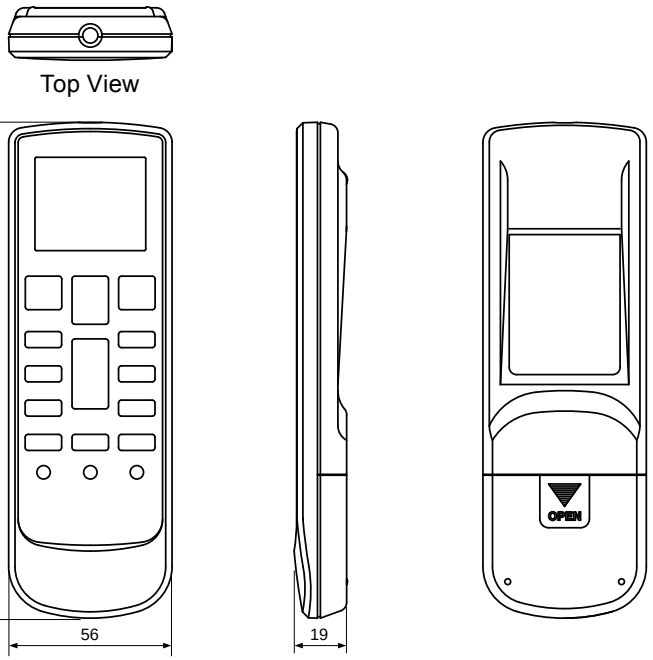


- Control signal might not be recognized in following cases:
  (i) A curtain or a wall, etc. exists between transmitter and receiver.
  (ii) There is an instant-start type (inverter type, etc.) fluorescent lamp in the room.
- Air conditioner might not work correctly when strong light hits the signal receiver window. Shut off the direct sunlight and also make illuminator far away from the receiver window.

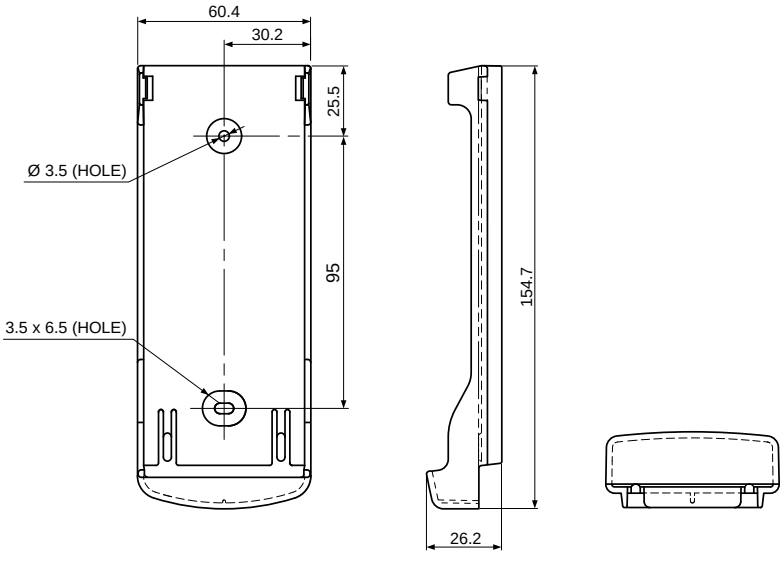
■ DIMENSIONS

● Controller

(Unit : mm)

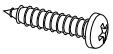
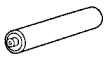


● Holder



INDOOR UNITS
(SIMULTANEOUS MULTI)

■ PACKING LIST (ACCESSORIES)

Name and shape	Quantity	Application
Remote controller holder	1	Use as remote controller holder
Tapping screw (M3 x 12 mm) 	2	For remote controller holder installation
Battery [1.5V (R03 / AAA)] 	2	For remote controller

■ SPECIFICATIONS

SIZE	(H x W x D mm)	170 x 56 x 19
WEIGHT	(g)	85 (w/o batteries)

INDOOR UNITS
(SIMULTANEOUS MULTI)

3. SPECIFICATIONS

3-1. COMPACT CASSETTE TYPE

Model No.	Indoor Unit		AU∗G18LVLB	AU∗G22LVLA	AU∗G24LVLA
Input power		V/ø/Hz	230/1/50		
Air flow [High] (Cooling / Heating)		m^3/h	680/800	930/930	
Dimension [Net] (H x W x D)		mm	245 x 570 x 570		
Weight		kg	15	16	
Model No.	Panel		UTG-UF∗D-W		
Dimension [Net] (H x W x D)		mm	49 x 700 x 700		
Weight		kg	2.6		

Model name				AU∗G18LVLB x 2
Energy efficiency class	Cooling			A+
	Heating (Average)			A+
Pdesign	Cooling		kW	10.00 (35°C)
	Heating (Average)			10.00 (-10°C)
SEER	Cooling		kWh/kWh	6.00
SCOP	Heating (Average)			4.00
Annual energy consumption	QCE		kWh/a	583
	QHE (Average)			3499
Sound power level	Cooling	High	dB (A)	50
	Heating			55

Notice for specifications

•Specifications and design subject to change without notice for further improvement.
Please check with your dealer.

INDOOR UNITS (SIMULTANEOUS MULTI)

3-2. SLIM DUCT TYPE

Model No.	Indoor Unit	AR∗G18LLTB
Input power	V/ø/Hz	230/1/50
Air flow [High]	m^3/h	940
Dimension [Net] (H x W x D)	mm	198 x 900 x 620
Weight	kg	23

The measurement static pressure of AR∗G18LLTB is 25Pa.

Model name				AR∗G18LLTB x 2
Energy efficiency class	Cooling			A+
	Heating (Average)			A+
Pdesign	Cooling		kW	10.00 (35°C)
	Heating (Average)			10.00 (-10°C)
SEER	Cooling		kWh/kWh	6.00
SCOP	Heating (Average)			4.00
Annual energy consumption	QCE		kWh/a	583
	QHE (Average)			3499
Sound power level	Cooling	High	dB (A)	58
	Heating			58

Notice for specifications

•Specifications and design subject to change without notice for further improvement.
Please check with your dealer.

3-3. DUCT TYPE

Model No.	Indoor Unit	AR∗G22LMLA	AR∗G24LMLA
Input power	V/ø/Hz	230/1/50	
Air flow [High]	m^3/h	1,100	
Dimension [Net] (H x W x D)	mm	270 x 1,135 x 700	
Weight	kg	38	

The measurement static pressure of AR∗G22LMLA, AR∗G24LMLA is 30Pa.

INDOOR UNITS (SIMULTANEOUS MULTI)

Notice for specifications

•Specifications and design subject to change without notice for further improvement.
Please check with your dealer.

3-4. FLOOR / CEILING TYPE

Model No.	Indoor Unit	AB∗G18LVTB	AB∗G22LVTA	AB∗G24LVTA
Input power	V/ø/Hz	230/1/50		
Air flow [High]	m^3/h	780	980	
Dimension [Net] (H x W x D)	mm	199 x 990 x 655		
Weight	kg	27		

Model name				AB∗G18LVTB x 2
Energy efficiency class	Cooling			A+
	Heating (Average)			A+
Pdesign	Cooling		kW	10.00 (35°C)
	Heating (Average)			10.00 (-10°C)
SEER	Cooling		kWh/kWh	6.00
SCOP	Heating (Average)			4.00
Annual energy consumption	QCE		kWh/a	583
	QHE (Average)			3499
Sound power level	Cooling	High	dB (A)	57
	Heating			57

Notice for specifications

•Specifications and design subject to change without notice for further improvement.
Please check with your dealer.

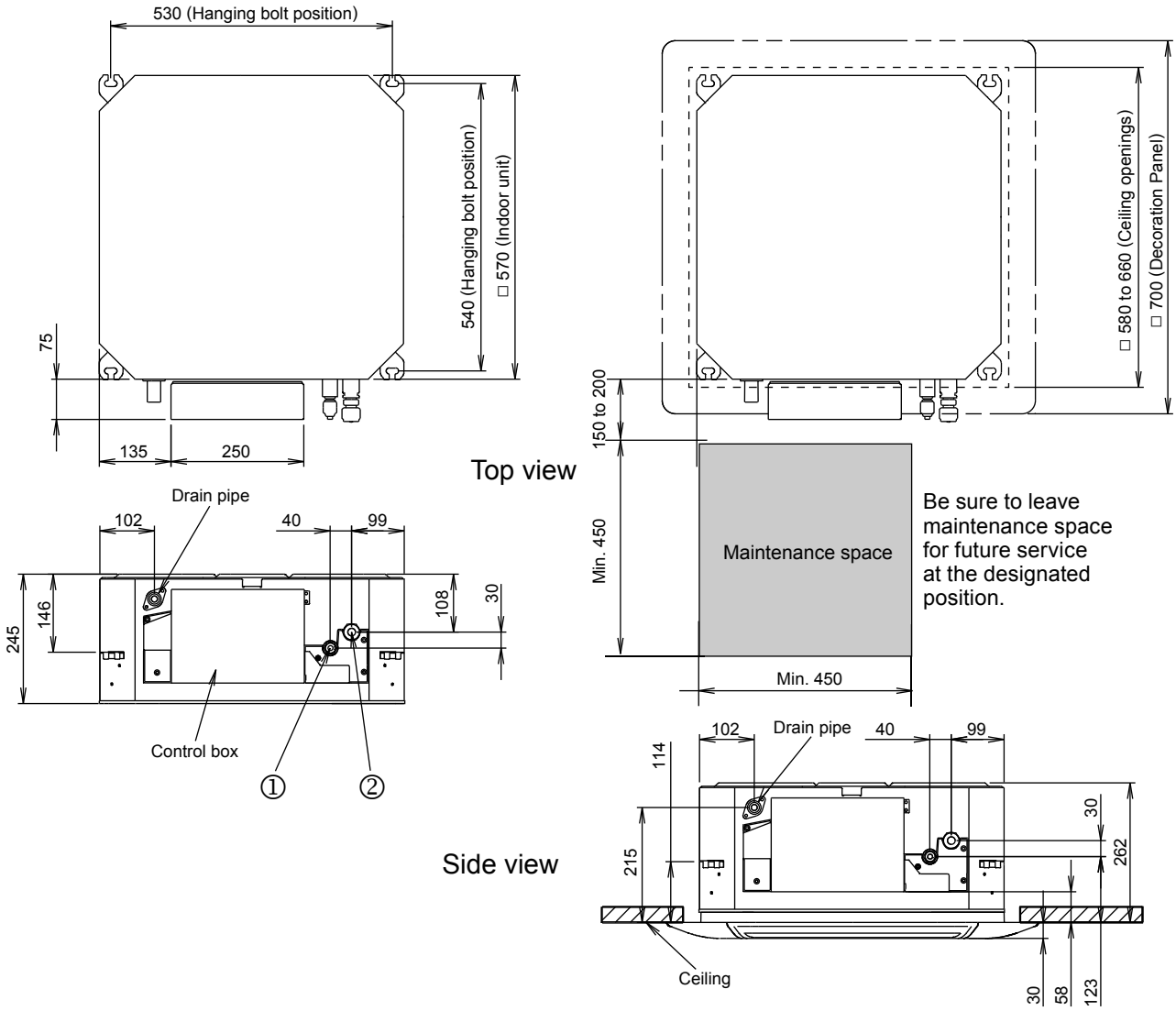
INDOOR UNITS (SIMULTANEOUS MULTI)

4. DIMENSIONS

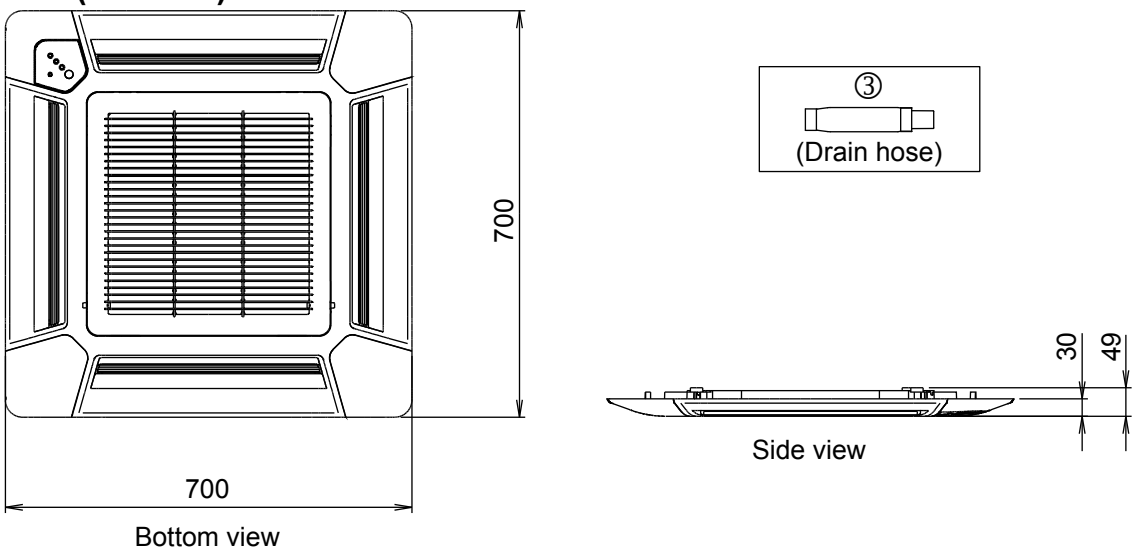
4-1. COMPACT CASSETTE TYPE

■ MODEL (UNIT) : AU∗G18LV, AU∗G22LV, AU∗G24LV

(Unit : mm)



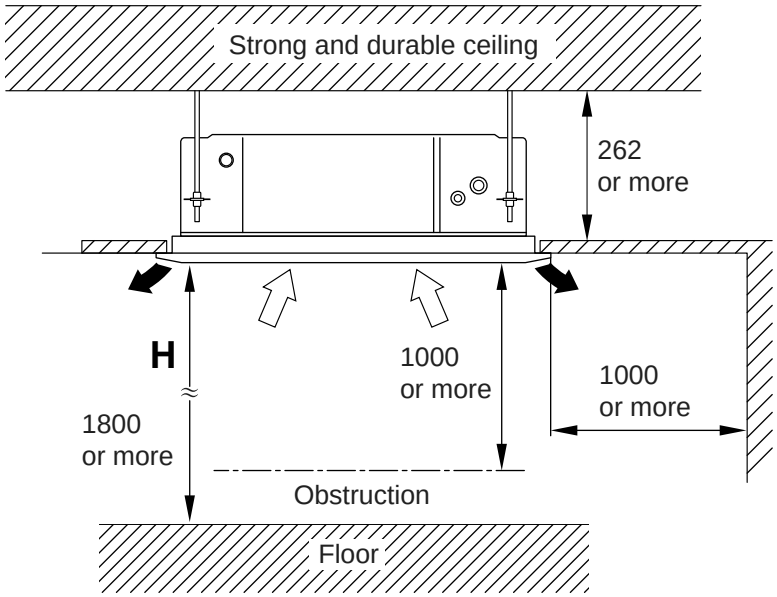
■ MODEL (GRILLE) : UTG-UF∗D-W



			AU∗G18LV	AU∗G22LV, AU∗G24LV
①	Refrigerant pipe flare connection	Liquid	ø 6.35 (ø 1/4 in.)	
②		Gas	ø 12.70 (ø 1/2 in.)	ø 15.88 (ø 5/8 in.)
③	Drain hose connection	Drain hose	VP25 [ø 25 (I.D.), ø 32 (O.D.)]	

■ INSTALLATION PLACE

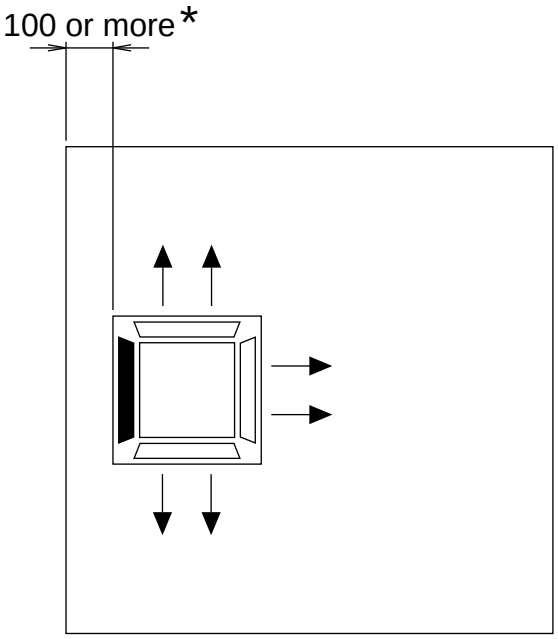
(Unit : mm)



	H (The maximum height from floor to ceiling) Unit: mm		
Model name	AU∗G18LV	AU∗G22LV	AU∗G24LV
Standard mode	2700	2700	2700
High Ceiling mode	3000	3000	3000

● 3-way directions setting

(Unit : mm)



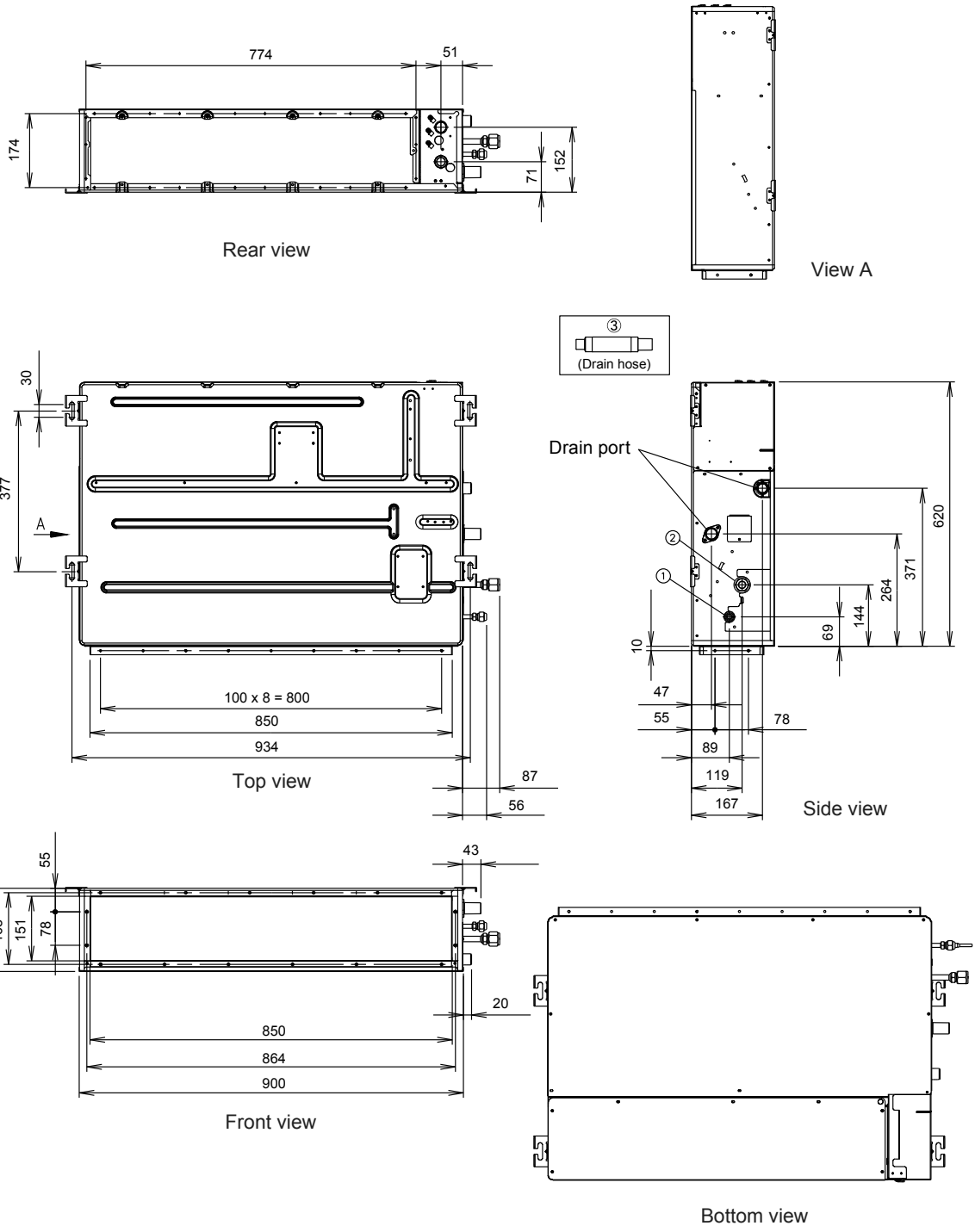
To set “3-way directions”, the air outlet shutter plate (UTR-YDZB) sold separately must be installed and “outlet-direction” switched to “3-way” by remote controller.

*When installing the indoor unit, be careful about the maintenance space.

4-2. SLIM DUCT TYPE

Unit : mm

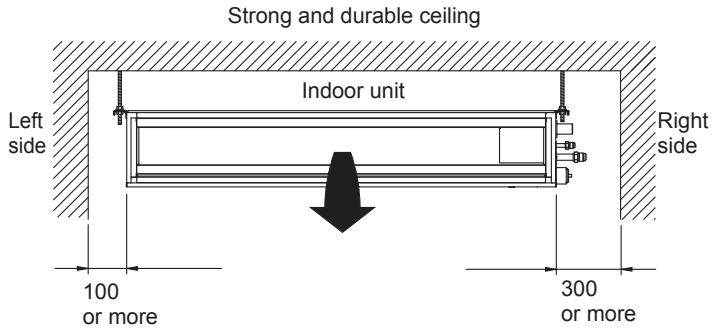
■MODEL : AR∗G18LL

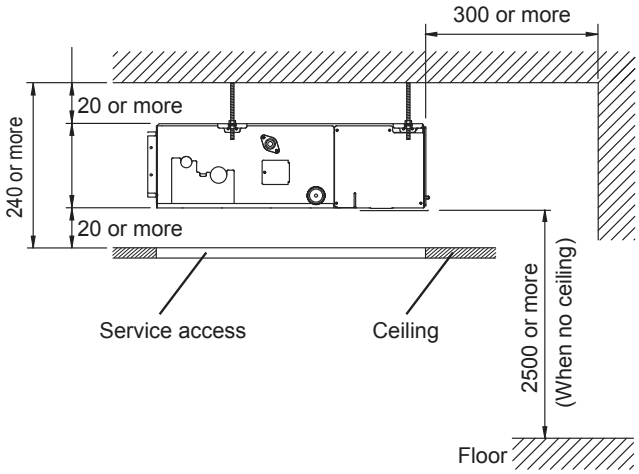


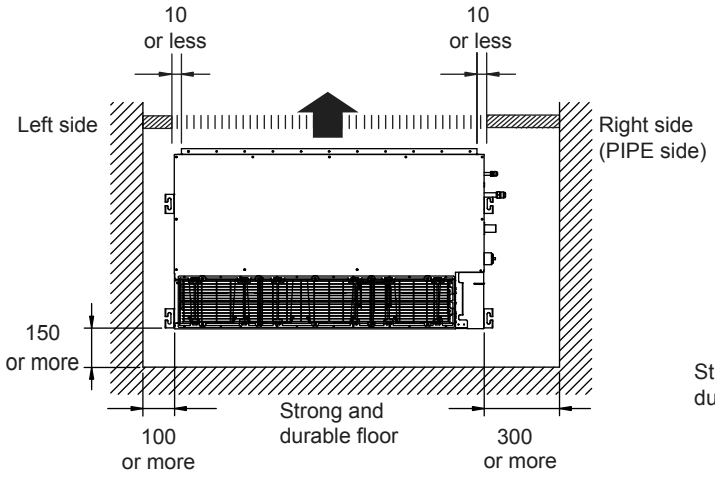
			AR∗G18LL
①	Refrigerant pipe flare connection	Liquid	ø 6.35 (ø 1/4 in.)
②		Gas	ø 12.70 (ø 1/2 in.)
③	Drain hose connection	Drain hose	VP25 [ø 25 (I.D.), ø 32 (O.D.)]

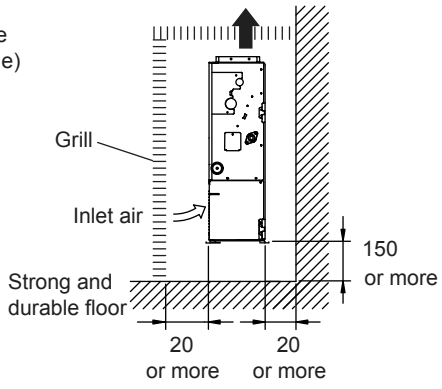
Unit : mm

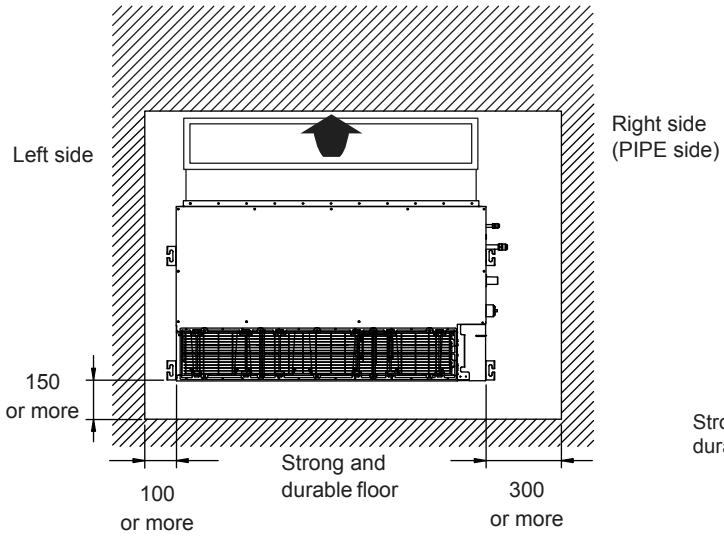
■ INSTALLATION PLACE

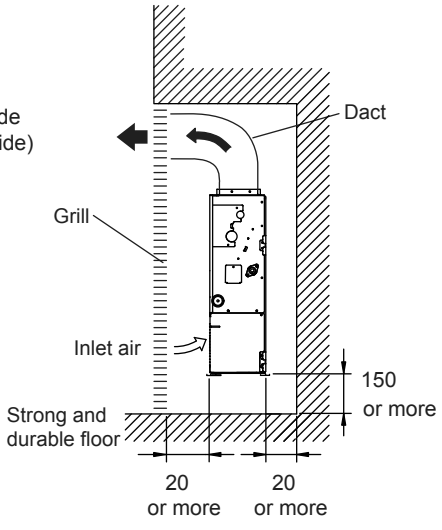








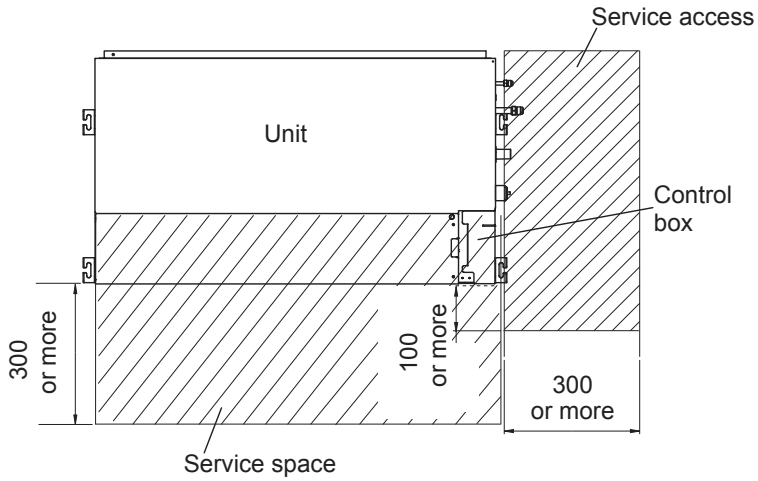




■ MAINTENANCE SPACE

Provide a service access for inspection purposes as shown below.

Do not place any wiring or illumination in the service space, as they will impede service.

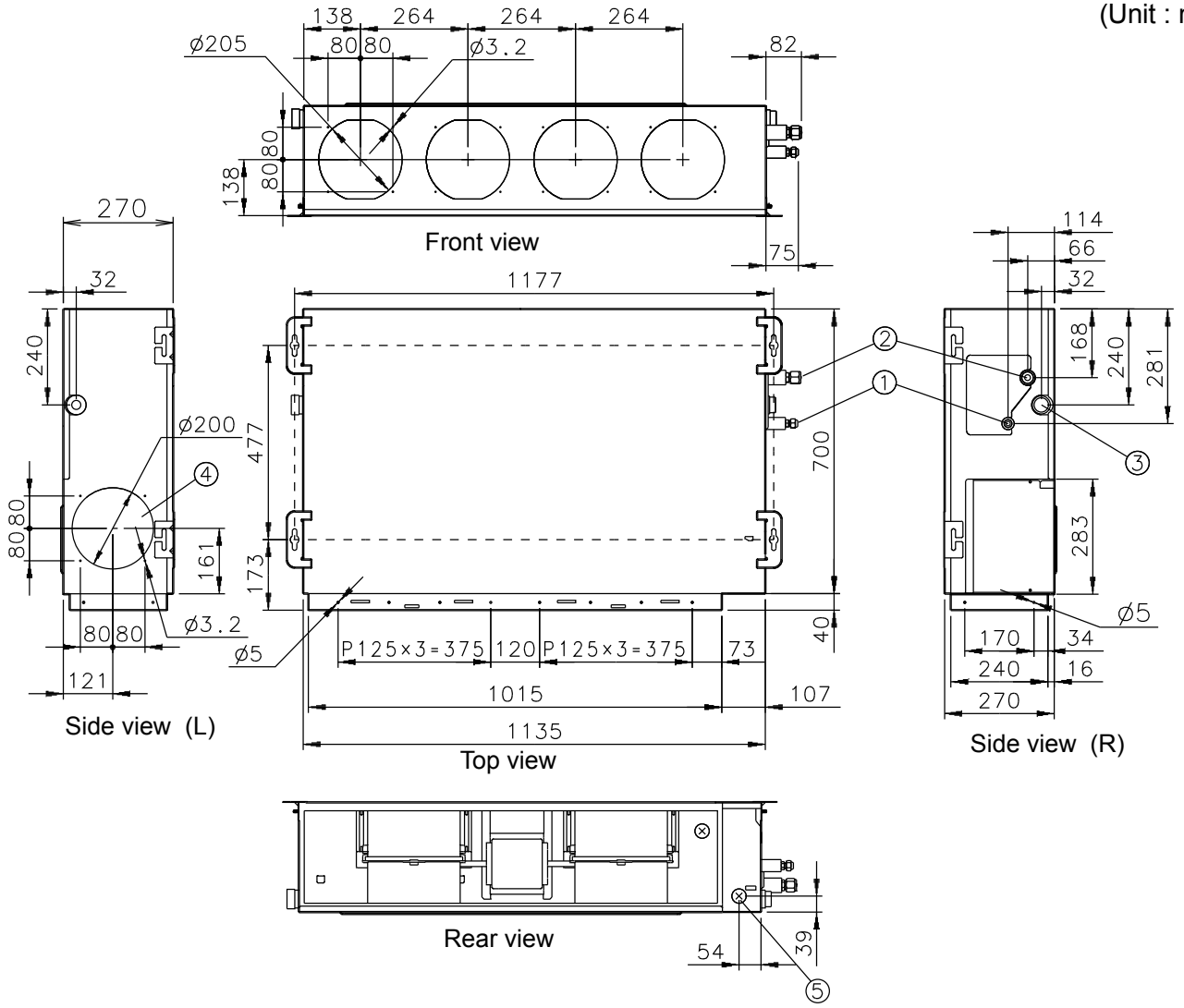


INDOOR UNITS
(SIMULTANEOUS MULTI)

4-3. DUCT TYPE

■MODEL: AR∗G22LM, AR∗G24LM

(Unit : mm)

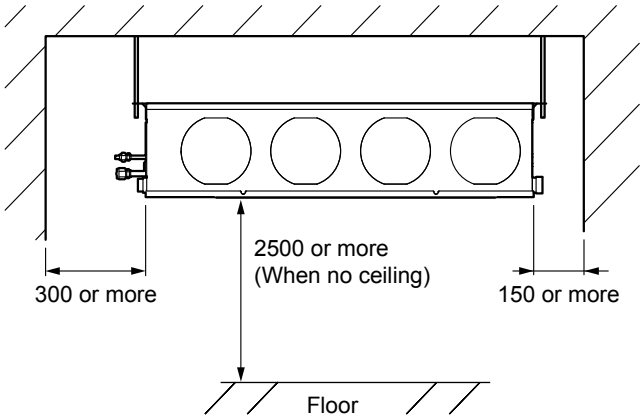


			AR∗G22LM, AR∗G24LM
①	Refrigerant pipe flare connection	Liquid	ø 6.35 (ø 1/4 in.)
②		Gas	ø 15.88 (ø 5/8 in.)
③	Drain hose connection	Drain port	I.D. 36, O.D. 38
④	Knock out hole (fresh air)	-	200
⑤	Hole for power cable	-	23

INDOOR UNITS
(SIMULTANEOUS MULTI)

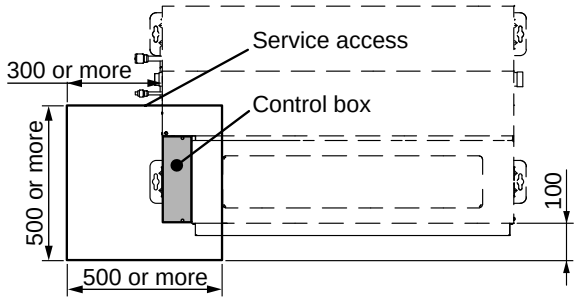
■ INSTALLATION PLACE

(Unit : mm)

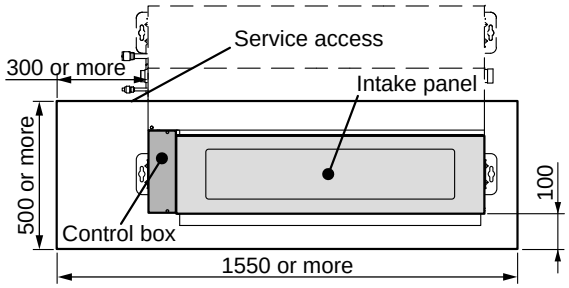


■ MAINTENANCE SPACE

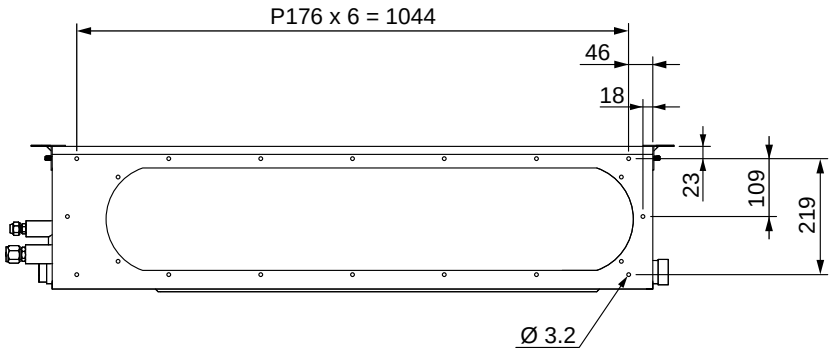
It shall be possible to install and remove the control box.



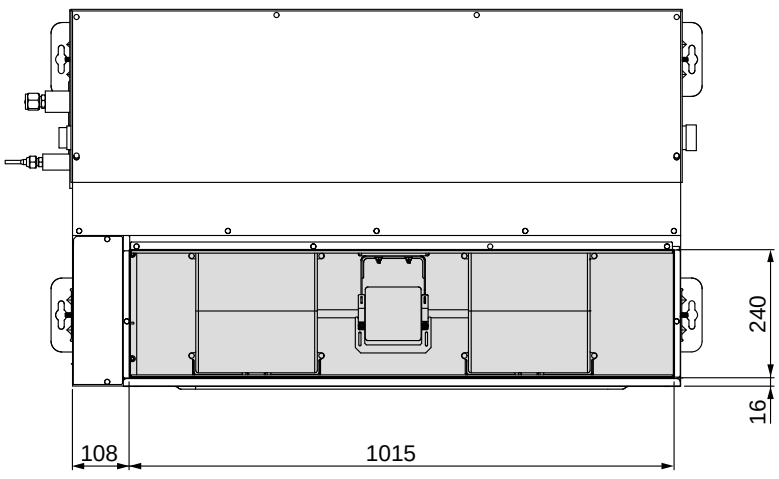
It shall be possible to install and remove the control box, fan units and filter.



■ WHEN USING A SQUARE DUCT



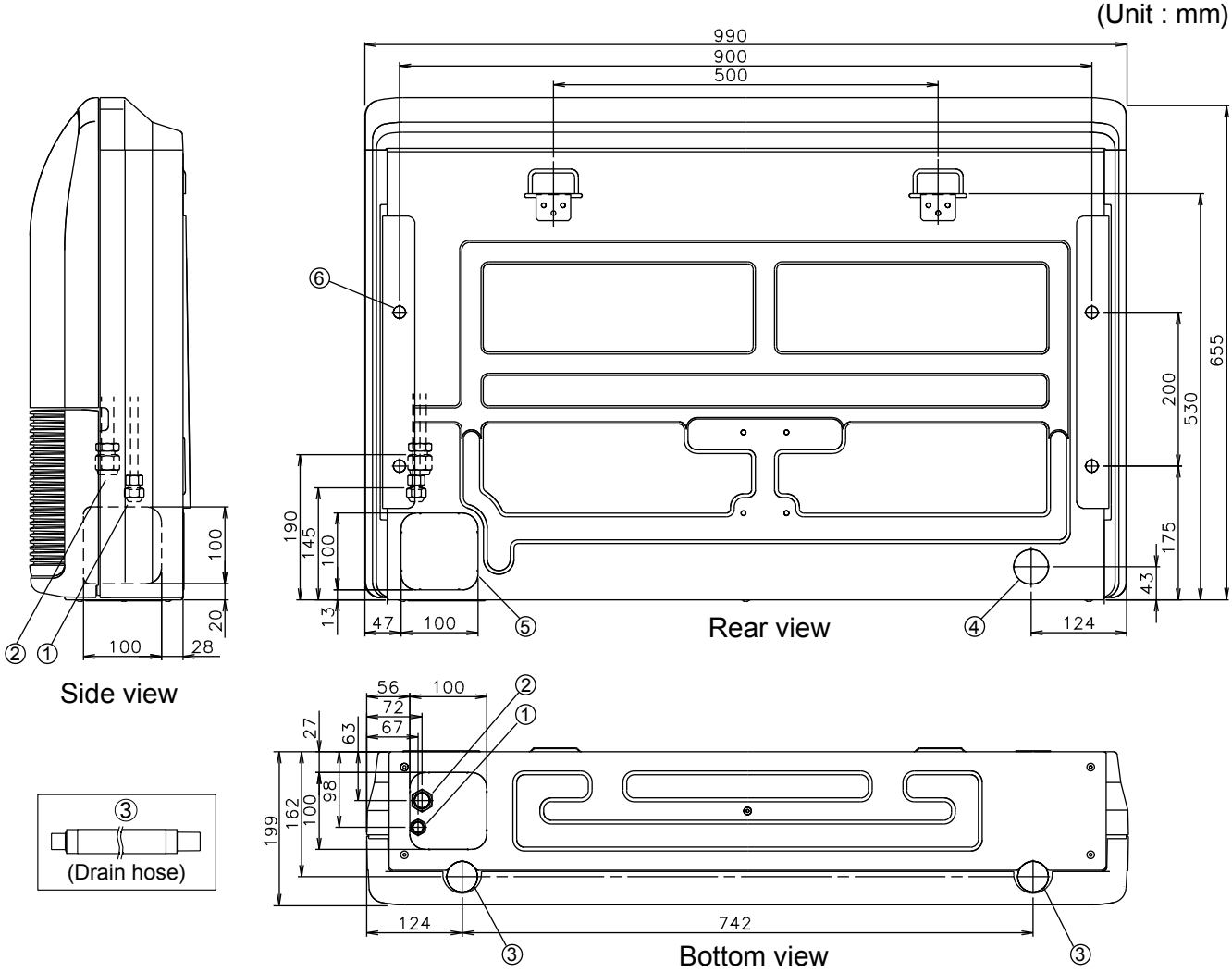
■ BOTTOM AIR INTAKE HOLE

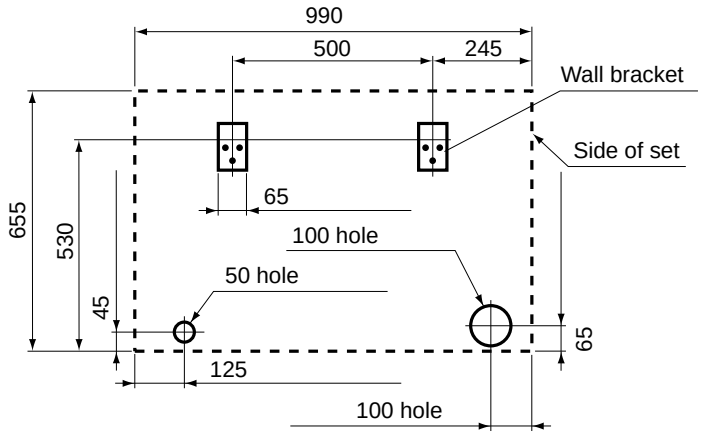


4-4. FLOOR / CEILING TYPE

■MODEL: AB∗G18LV, AB∗G22LV, AB∗G24LV

(Unit : mm)



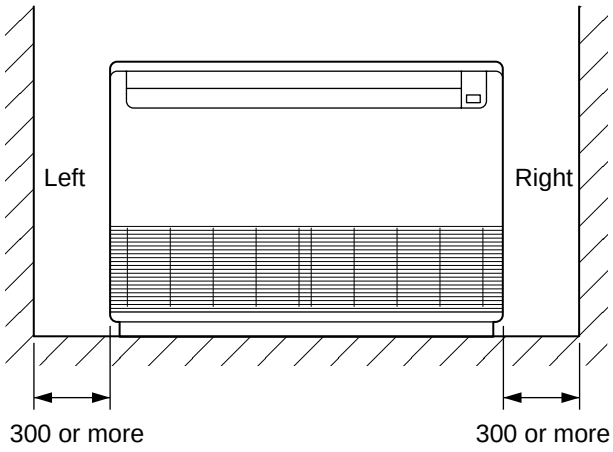


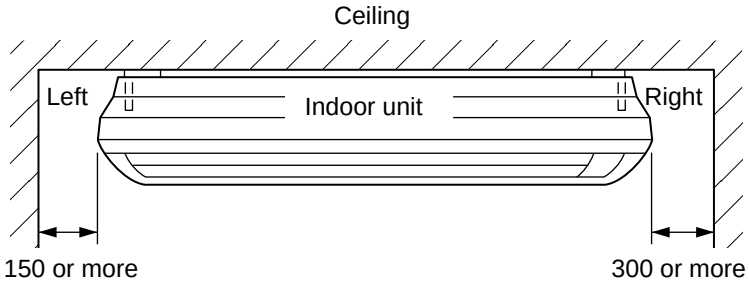
			AB∗G18LV	AB∗G22LV, AB∗G24LV
①	Refrigerant pipe flare connection	Liquid	ø 6.35 (ø 1/4 in.)	
②		Gas	ø 12.70 (ø 1/2 in.)	ø 15.88 (ø 5/8 in.)
③	Drain hose connection	Drain hose	VP25 [ø25 (I.D.), ø32 (O.D.)]	
④	Knock out hole (fresh air)	Drain outlet	ø 45	
⑤		-	-	
⑥	Hole for lifting bolt	-	Use M10 screw bolt	

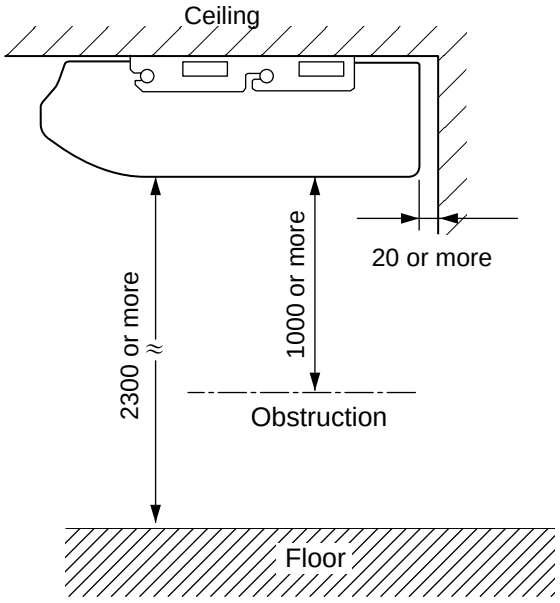
INDOOR UNITS
(SIMULTANEOUS MULTI)

■ INSTALLATION PLACE

(Unit : mm)



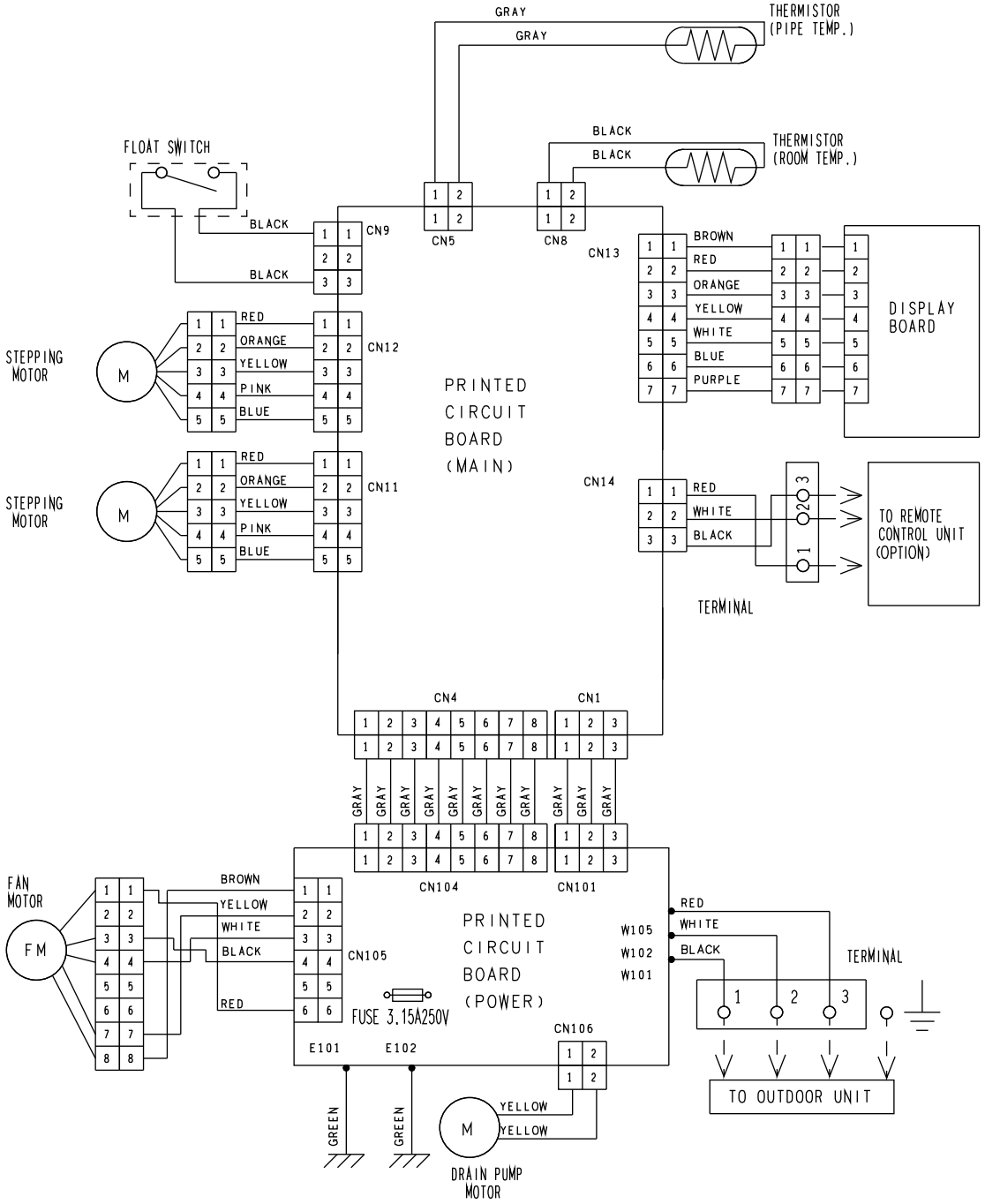




5. WIRING DIAGRAMS

5-1. COMPACT CASSETTE TYPE

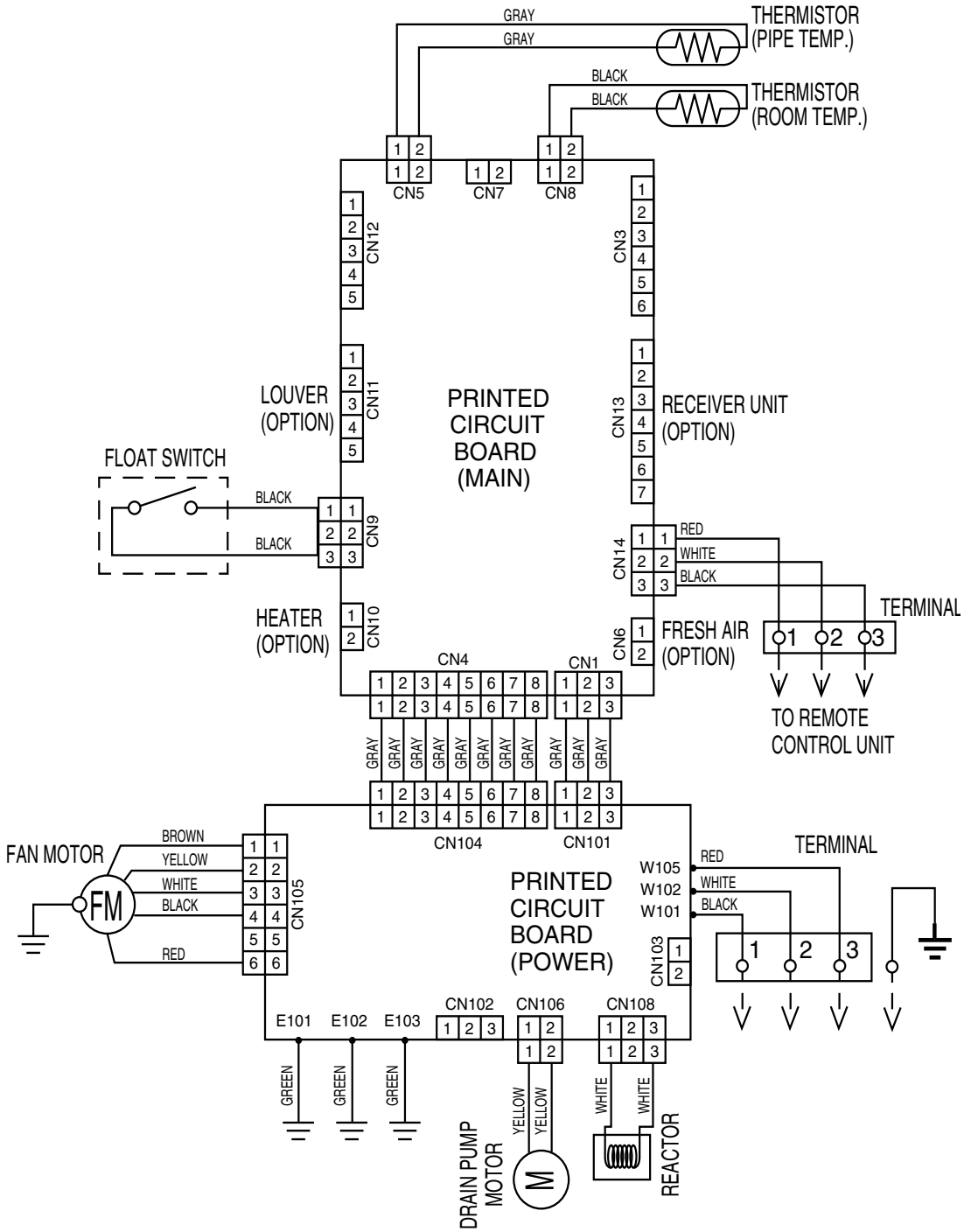
■ MODEL: AU∗G18LV, AU∗G22LV, AU∗G24LV



INDOOR UNITS
(SIMULTANEOUS MULTI)

5-2. SLIM DUCT TYPE

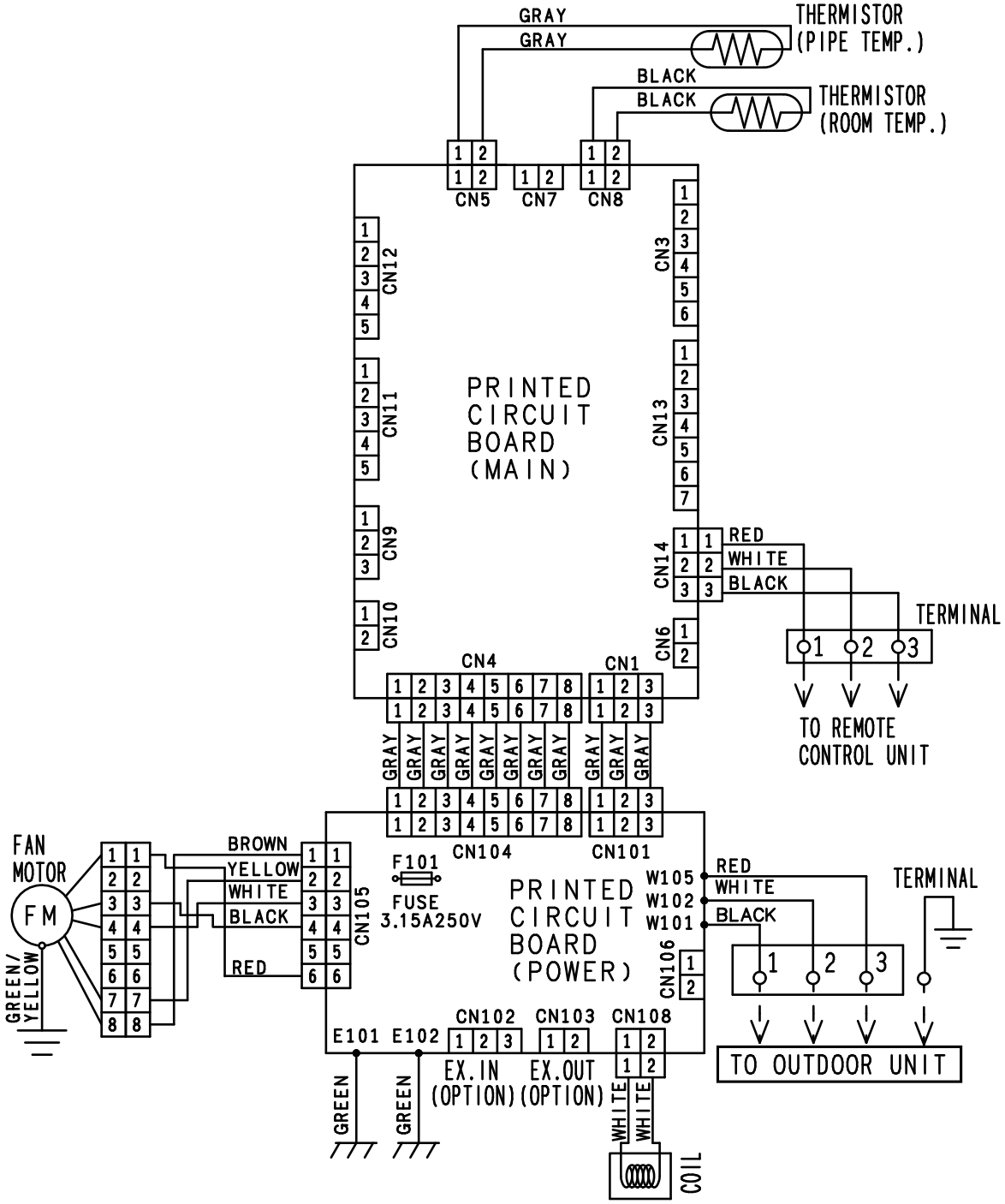
■ MODELS : AR∗G18LL



INDOOR UNITS
(SIMULTANEOUS MULTI)

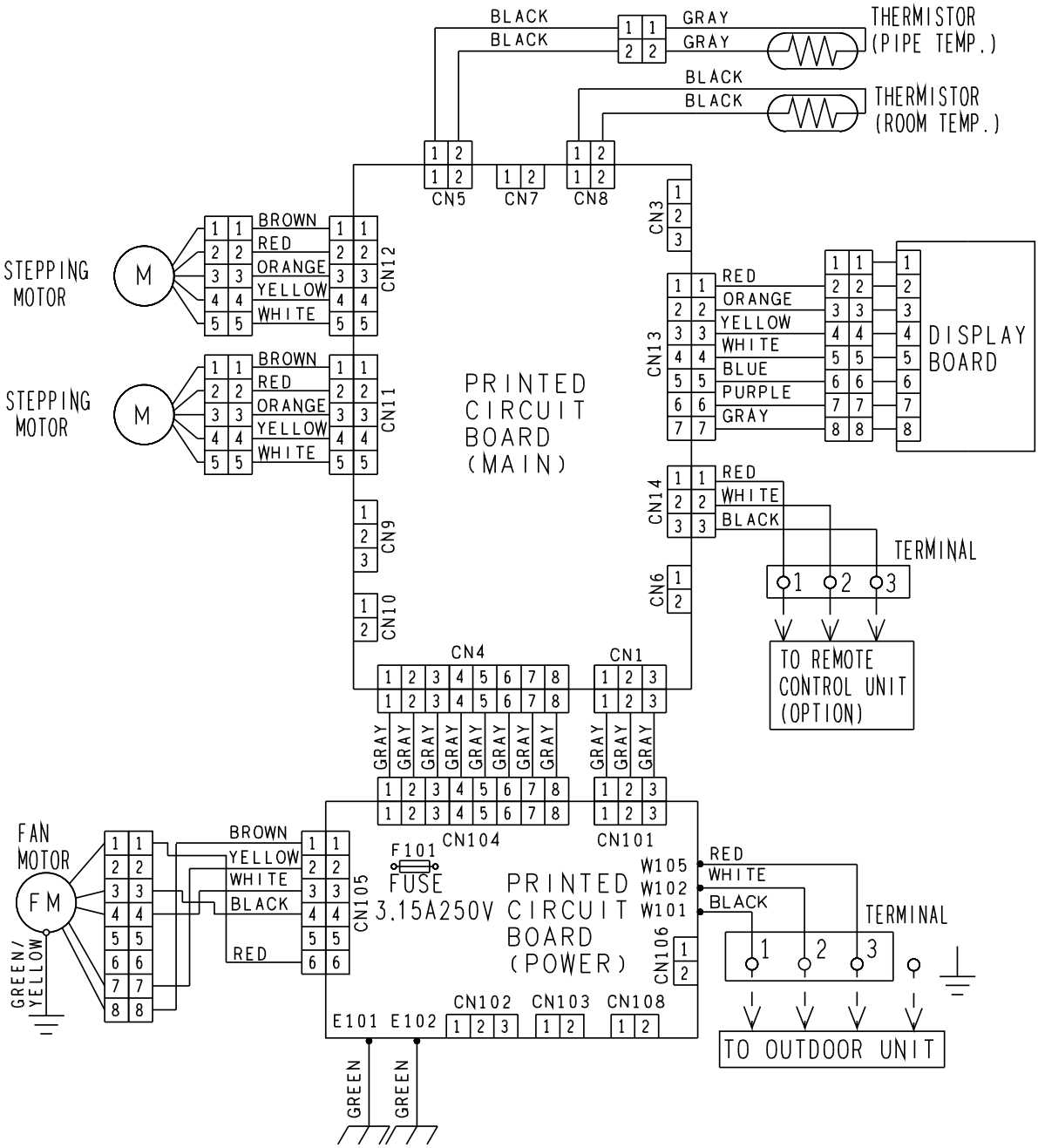
5-3. DUCT TYPE

■ MODEL: AR∗G22LM, AR∗G24LM



5-4. FLOOR / CEILING TYPE

■ MODEL: AB∗G18LV, AB∗G22LV, AB∗G24LV



INDOOR UNITS (SIMULTANEOUS MULTI)

6. CAPACITY TABLE

6-1. COOLING CAPACITY OF SIMULTANEOUS MULTI (TWIN)

6-1-1. COMPACT CASSETTE TYPE

This table is created using the maximum capacity.

■ MODEL: AU∗G18LV × 2

AFR	22.7

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	8.59	6.32	1.41	9.57	6.36	1.43	9.90	6.92	1.44	10.55	6.94	1.45	10.88	7.49	1.46	11.53	7.46	1.47	12.18	7.95	1.49
	-10	8.53	6.14	1.44	9.50	6.18	1.46	9.83	6.71	1.47	10.48	6.74	1.49	10.80	7.27	1.49	11.45	7.25	1.51	12.10	7.72	1.52
	0	8.43	6.09	1.53	9.39	6.13	1.55	9.71	6.66	1.56	10.35	6.68	1.58	10.67	7.22	1.59	11.31	7.19	1.60	11.95	7.66	1.62
	5	8.37	6.11	1.63	9.32	6.15	1.66	9.64	6.69	1.67	10.28	6.71	1.68	10.59	7.24	1.69	11.23	7.22	1.71	11.87	7.69	1.72
	10	8.33	6.16	1.76	9.27	6.20	1.78	9.59	6.74	1.79	10.22	6.76	1.81	10.54	7.30	1.82	11.17	7.28	1.84	11.80	7.75	1.86
	15	8.27	6.14	1.96	9.22	6.18	1.99	9.53	6.72	2.00	10.16	6.74	2.02	10.47	7.28	2.03	11.10	7.25	2.05	11.73	7.72	2.07
	20	8.48	5.98	2.40	9.44	6.02	2.44	9.76	6.54	2.45	10.41	6.56	2.48	10.73	7.09	2.49	11.37	7.06	2.51	12.02	7.52	2.54
	25	8.77	6.23	2.85	9.77	6.26	2.89	10.10	6.81	2.90	10.77	6.83	2.93	11.10	7.38	2.95	11.77	7.35	2.98	12.44	7.83	3.01
	30	8.91	6.28	3.36	9.92	6.32	3.41	10.26	6.87	3.43	10.94	6.89	3.46	11.28	7.45	3.48	11.95	7.42	3.51	12.63	7.90	3.55
	35	8.85	6.34	3.72	9.86	6.38	3.78	10.19	6.94	3.80	10.86	6.96	3.84	11.20	7.52	3.86	11.87	7.49	3.90	12.54	7.98	3.93
	40	7.99	5.94	3.81	8.91	5.97	3.87	9.21	6.49	3.89	9.82	6.51	3.93	10.12	7.03	3.95	10.73	7.01	3.99	11.33	7.46	4.03
	46	6.87	5.42	3.85	7.65	5.45	3.91	7.91	5.93	3.93	8.44	5.95	3.97	8.70	6.42	3.99	9.22	6.40	4.03	9.74	6.81	4.07

■ MODEL: AU∗G22LV × 2

AFR	34.3

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	10.57	7.87	1.48	11.77	7.92	1.50	12.18	8.61	1.51	12.98	8.64	1.52	13.38	9.33	1.53	14.18	9.29	1.55	14.98	9.89	1.56
	-10	10.46	7.85	1.56	11.65	7.89	1.58	12.05	8.58	1.59	12.85	8.61	1.61	13.24	9.30	1.62	14.04	9.26	1.63	14.83	9.87	1.65
	0	10.38	7.73	1.65	11.56	7.77	1.67	11.95	8.45	1.68	12.74	8.48	1.70	13.14	9.16	1.71	13.92	9.12	1.72	14.71	9.71	1.74
	5	10.28	7.75	1.75	11.45	7.80	1.78	11.84	8.47	1.78	12.62	8.50	1.80	13.01	9.18	1.81	13.79	9.15	1.83	14.58	9.74	1.85
	10	10.22	7.82	1.83	11.38	7.86	1.86	11.77	8.55	1.87	12.54	8.58	1.89	12.93	9.26	1.90	13.71	9.22	1.92	14.48	9.83	1.94
	15	10.13	7.89	2.11	11.29	7.94	2.14	11.67	8.63	2.15	12.44	8.66	2.17	12.83	9.35	2.18	13.60	9.31	2.20	14.37	9.92	2.23
	20	10.34	7.59	2.51	11.52	7.63	2.55	11.91	8.30	2.57	12.70	8.33	2.59	13.09	8.99	2.60	13.87	8.96	2.63	14.66	9.54	2.66
	25	10.87	8.01	2.94	12.10	8.06	2.98	12.52	8.76	3.00	13.34	8.79	3.03	13.76	9.49	3.04	14.58	9.45	3.07	15.41	10.07	3.11
	30	11.31	7.94	4.55	12.59	7.99	4.62	13.02	8.69	4.64	13.88	8.72	4.69	14.31	9.41	4.71	15.17	9.37	4.76	16.03	9.99	4.81
	35	11.06	7.90	4.79	12.32	7.94	4.87	12.74	8.64	4.89	13.58	8.66	4.94	14.00	9.36	4.97	14.84	9.32	5.02	15.68	9.93	5.07
	40	10.14	7.46	4.87	11.30	7.50	4.94	11.68	8.15	4.97	12.45	8.18	5.02	12.84	8.83	5.04	13.61	8.80	5.09	14.38	9.37	5.14
	46	8.44	6.75	4.20	9.40	6.79	4.27	9.72	7.39	4.29	10.36	7.41	4.33	10.68	8.00	4.36	11.32	7.97	4.40	11.96	8.49	4.44

■ MODEL: AU∗G24LV × 2

AFR	34.3

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	11.87	8.60	2.12	13.22	8.65	2.16	13.68	9.41	2.17	14.58	9.44	2.19	15.03	10.19	2.20	15.93	10.15	2.22	16.83	10.82	2.24
	-10	11.75	8.58	2.21	13.09	8.63	2.25	13.54	9.38	2.26	14.43	9.41	2.28	14.88	10.16	2.29	15.77	10.12	2.32	16.66	10.78	2.34
	0	11.69	8.45	2.30	13.03	8.50	2.34	13.47	9.24	2.35	14.36	9.27	2.37	14.80	10.01	2.39	15.69	9.97	2.41	16.58	10.62	2.43
	5	11.59	8.47	2.35	12.91	8.52	2.39	13.35	9.26	2.40	14.24	9.29	2.43	14.68	10.04	2.44	15.56	10.00	2.46	16.44	10.65	2.49
	10	11.51	8.53	2.39	12.83	8.58	2.42	13.26	9.33	2.44	14.14	9.36	2.46	14.58	10.11	2.47	15.45	10.07	2.50	16.32	10.72	2.52
	15	11.53	8.52	2.53	12.85	8.57	2.57	13.29	9.32	2.58	14.16	9.35	2.61	14.60	10.10	2.62	15.48	10.06	2.65	16.35	10.72	2.68
	20	11.90	8.52	3.12	13.26	8.57	3.17	13.71	9.32	3.19	14.61	9.35	3.22	15.07	10.09	3.24	15.97	10.05	3.27	16.87	10.71	3.30
	25	12.40	8.89	3.58	13.81	8.94	3.63	14.28	9.72	3.65	15.23	9.75	3.69	15.70	10.53	3.71	16.64	10.49	3.75	17.58	11.18	3.78
	30	12.78	8.93	5.06	14.24	8.98	5.14	14.73	9.76	5.17	15.70	9.79	5.22	16.18	10.57	5.25	17.15	10.53	5.30	18.12	11.22	5.35
	35	12.64	8.96	5.40	14.08	9.02	5.48	14.56	9.80	5.51	15.52	9.83	5.57	16.00	10.62	5.59	16.96	10.58	5.65	17.92	11.27	5.71
	40	11.62	8.47	5.51	12.94	8.52	5.59	13.38	9.26	5.62	14.26	9.29	5.68	14.71	10.03	5.71	15.59	9.99	5.76	16.47	10.64	5.82
	46	8.88	7.23	4.21	9.89	7.27	4.27	10.23	7.90	4.30	10.90	7.93	4.34	11.24	8.56	4.36	11.92	8.53	4.41	12.59	9.08	4.45

AFR : Air Flow Rate (m³/min.)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
IP : Input Power (kW)

6-1-2. SLIM DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G18LL × 2

AFR	31.3

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	8.59	6.32	1.41	9.57	6.36	1.43	9.90	6.92	1.44	10.55	6.94	1.45	10.88	7.49	1.46	11.53	7.46	1.47	12.18	7.95	1.49
	-10	8.53	6.14	1.44	9.50	6.18	1.46	9.83	6.71	1.47	10.48	6.74	1.49	10.80	7.27	1.49	11.45	7.25	1.51	12.10	7.72	1.52
	0	8.43	6.09	1.53	9.39	6.13	1.55	9.71	6.66	1.56	10.35	6.68	1.58	10.67	7.22	1.59	11.31	7.19	1.60	11.95	7.66	1.62
	5	8.37	6.11	1.63	9.32	6.15	1.66	9.64	6.69	1.67	10.28	6.71	1.68	10.59	7.24	1.69	11.23	7.22	1.71	11.87	7.69	1.72
	10	8.33	6.16	1.76	9.27	6.20	1.78	9.59	6.74	1.79	10.22	6.76	1.81	10.54	7.30	1.82	11.17	7.28	1.84	11.80	7.75	1.86
	15	8.27	6.14	1.96	9.22	6.18	1.99	9.53	6.72	2.00	10.16	6.74	2.02	10.47	7.28	2.03	11.10	7.25	2.05	11.73	7.72	2.07
	20	8.48	5.98	2.40	9.44	6.02	2.44	9.76	6.54	2.45	10.41	6.56	2.48	10.73	7.09	2.49	11.37	7.06	2.51	12.02	7.52	2.54
	25	8.77	6.23	2.85	9.77	6.26	2.89	10.10	6.81	2.90	10.77	6.83	2.93	11.10	7.38	2.95	11.77	7.35	2.98	12.44	7.83	3.01
	30	8.91	6.28	3.36	9.92	6.32	3.41	10.26	6.87	3.43	10.94	6.89	3.46	11.28	7.45	3.48	11.95	7.42	3.51	12.63	7.90	3.55
	35	8.85	6.34	3.72	9.86	6.38	3.78	10.19	6.94	3.80	10.86	6.96	3.84	11.20	7.52	3.86	11.87	7.49	3.90	12.54	7.98	3.93
	40	7.99	5.94	3.81	8.91	5.97	3.87	9.21	6.49	3.89	9.82	6.51	3.93	10.12	7.03	3.95	10.73	7.01	3.99	11.33	7.46	4.03
	46	6.87	5.42	3.85	7.65	5.45	3.91	7.91	5.93	3.93	8.44	5.95	3.97	8.70	6.42	3.99	9.22	6.40	4.03	9.74	6.81	4.07

AFR : Air Flow Rate (m³/min.)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
IP : Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

6-1-3. DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G22LM × 2

AFR	36.7

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	10.62	8.27	1.60	11.83	8.32	1.63	12.24	9.04	1.63	13.04	9.07	1.65	13.45	9.80	1.66	14.26	9.76	1.68	15.06	10.39	1.69
	-10	10.54	8.27	1.69	11.74	8.31	1.72	12.14	9.04	1.73	12.94	9.07	1.75	13.34	9.79	1.75	14.14	9.75	1.77	14.94	10.39	1.79
	0	10.45	8.13	1.76	11.64	8.18	1.79	12.03	8.89	1.80	12.83	8.92	1.82	13.22	9.64	1.83	14.02	9.60	1.84	14.81	10.22	1.86
	5	10.34	8.16	1.86	11.52	8.21	1.89	11.91	8.93	1.90	12.69	8.95	1.92	13.09	9.67	1.93	13.87	9.63	1.95	14.66	10.26	1.97
	10	10.27	8.24	2.05	11.44	8.29	2.08	11.83	9.02	2.09	12.61	9.05	2.11	13.00	9.77	2.12	13.78	9.73	2.14	14.56	10.36	2.16
	15	10.19	8.34	2.24	11.35	8.39	2.27	11.74	9.12	2.28	12.51	9.15	2.31	12.90	9.88	2.32	13.67	9.84	2.34	14.44	10.48	2.36
	20	10.42	7.98	2.73	11.61	8.02	2.77	12.00	8.72	2.78	12.80	8.75	2.81	13.19	9.45	2.82	13.98	9.41	2.85	14.77	10.03	2.88
	25	10.95	8.43	3.16	12.19	8.48	3.20	12.61	9.22	3.22	13.44	9.25	3.25	13.86	9.98	3.27	14.69	9.94	3.30	15.52	10.59	3.33
	30	11.36	8.26	4.74	12.65	8.31	4.81	13.09	9.04	4.84	13.95	9.07	4.89	14.38	9.79	4.91	15.24	9.75	4.96	16.10	10.39	5.01
	35	11.06	8.20	5.00	12.32	8.25	5.08	12.74	8.97	5.10	13.58	9.00	5.15	14.00	9.72	5.18	14.84	9.68	5.23	15.68	10.31	5.28
	40	10.21	7.99	5.08	11.38	8.04	5.16	11.77	8.74	5.19	12.54	8.77	5.24	12.93	9.47	5.27	13.71	9.43	5.32	14.48	10.05	5.37
	46	8.50	6.99	4.42	9.47	7.03	4.49	9.79	7.65	4.51	10.44	7.67	4.56	10.76	8.28	4.58	11.41	8.25	4.63	12.05	8.79	4.67

■ MODEL: AR∗G24LM × 2

AFR	36.7

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	12.09	9.11	2.31	13.47	9.17	2.35	13.93	9.97	2.36	14.85	10.00	2.38	15.30	10.80	2.40	16.22	10.76	2.42	17.14	11.46	2.44
	-10	12.02	9.13	2.39	13.39	9.18	2.43	13.84	9.98	2.44	14.76	10.02	2.47	15.21	10.82	2.48	16.12	10.77	2.50	17.04	11.48	2.53
	0	11.95	8.98	2.45	13.32	9.04	2.49	13.77	9.82	2.50	14.68	9.85	2.53	15.13	10.64	2.54	16.04	10.60	2.57	16.95	11.29	2.59
	5	11.82	9.00	2.53	13.17	9.06	2.57	13.62	9.84	2.58	14.52	9.88	2.61	14.97	10.67	2.62	15.86	10.62	2.65	16.76	11.32	2.68
	10	11.63	8.99	2.56	12.95	9.05	2.60	13.39	9.83	2.61	14.28	9.87	2.64	14.72	10.66	2.65	15.60	10.61	2.68	16.48	11.31	2.71
	15	11.67	9.01	2.69	13.00	9.06	2.73	13.45	9.85	2.74	14.33	9.89	2.77	14.78	10.68	2.78	15.66	10.63	2.81	16.55	11.33	2.84
	20	11.95	8.88	3.34	13.31	8.93	3.39	13.77	9.71	3.41	14.67	9.75	3.44	15.13	10.52	3.46	16.03	10.48	3.49	16.94	11.17	3.53
	25	12.50	9.31	3.78	13.92	9.37	3.84	14.40	10.19	3.86	15.35	10.22	3.90	15.82	11.04	3.92	16.77	10.99	3.96	17.72	11.71	4.00
	30	12.79	9.24	5.24	14.25	9.29	5.33	14.73	10.10	5.35	15.70	10.13	5.41	16.19	10.94	5.44	17.16	10.90	5.49	18.13	11.61	5.54
	35	12.64	9.30	5.64	14.08	9.35	5.72	14.56	10.17	5.75	15.52	10.20	5.81	16.00	11.01	5.84	16.96	10.97	5.90	17.92	11.69	5.96
	40	11.79	8.90	5.78	13.13	8.95	5.87	13.58	9.73	5.90	14.48	9.76	5.96	14.93	10.55	5.99	15.82	10.50	6.05	16.72	11.19	6.11
	46	9.05	7.56	4.54	10.08	7.61	4.61	10.43	8.27	4.64	11.11	8.30	4.68	11.46	8.96	4.71	12.14	8.92	4.75	12.83	9.50	4.80

AFR : Air Flow Rate (m³/min.)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
IP : Input Power (kW)

6-1-4. FLOOR / CEILING TYPE

This table is created using the maximum capacity.

■ MODEL: AB∗G18LV x 2

AFR	26.0

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	8.59	6.32	1.41	9.57	6.36	1.43	9.90	6.92	1.44	10.55	6.94	1.45	10.88	7.49	1.46	11.53	7.46	1.47	12.18	7.95	1.49
	-10	8.53	6.14	1.44	9.50	6.18	1.46	9.83	6.71	1.47	10.48	6.74	1.49	10.80	7.27	1.49	11.45	7.25	1.51	12.10	7.72	1.52
	0	8.43	6.09	1.53	9.39	6.13	1.55	9.71	6.66	1.56	10.35	6.68	1.58	10.67	7.22	1.59	11.31	7.19	1.60	11.95	7.66	1.62
	5	8.37	6.11	1.63	9.32	6.15	1.66	9.64	6.69	1.67	10.28	6.71	1.68	10.59	7.24	1.69	11.23	7.22	1.71	11.87	7.69	1.72
	10	8.33	6.16	1.76	9.27	6.20	1.78	9.59	6.74	1.79	10.22	6.76	1.81	10.54	7.30	1.82	11.17	7.28	1.84	11.80	7.75	1.86
	15	8.27	6.14	1.96	9.22	6.18	1.99	9.53	6.72	2.00	10.16	6.74	2.02	10.47	7.28	2.03	11.10	7.25	2.05	11.73	7.72	2.07
	20	8.48	5.98	2.40	9.44	6.02	2.44	9.76	6.54	2.45	10.41	6.56	2.48	10.73	7.09	2.49	11.37	7.06	2.51	12.02	7.52	2.54
	25	8.77	6.23	2.85	9.77	6.26	2.89	10.10	6.81	2.90	10.77	6.83	2.93	11.10	7.38	2.95	11.77	7.35	2.98	12.44	7.83	3.01
	30	8.91	6.28	3.36	9.92	6.32	3.41	10.26	6.87	3.43	10.94	6.89	3.46	11.28	7.45	3.48	11.95	7.42	3.51	12.63	7.90	3.55
	35	8.85	6.34	3.72	9.86	6.38	3.78	10.19	6.94	3.80	10.86	6.96	3.84	11.20	7.52	3.86	11.87	7.49	3.90	12.54	7.98	3.93
	40	7.99	5.94	3.81	8.91	5.97	3.87	9.21	6.49	3.89	9.82	6.51	3.93	10.12	7.03	3.95	10.73	7.01	3.99	11.33	7.46	4.03
	46	6.87	5.42	3.85	7.65	5.45	3.91	7.91	5.93	3.93	8.44	5.95	3.97	8.70	6.42	3.99	9.22	6.40	4.03	9.74	6.81	4.07

■ MODEL: AB∗G22LV x 2

AFR	32.7

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	10.57	7.87	1.48	11.77	7.92	1.50	12.18	8.61	1.51	12.98	8.64	1.52	13.38	9.33	1.53	14.18	9.29	1.55	14.98	9.89	1.56
	-10	10.46	7.85	1.56	11.65	7.89	1.58	12.05	8.58	1.59	12.85	8.61	1.61	13.24	9.30	1.62	14.04	9.26	1.63	14.83	9.87	1.65
	0	10.38	7.73	1.65	11.56	7.77	1.67	11.95	8.45	1.68	12.74	8.48	1.70	13.14	9.16	1.71	13.92	9.12	1.72	14.71	9.71	1.74
	5	10.28	7.75	1.75	11.45	7.80	1.78	11.84	8.47	1.78	12.62	8.50	1.80	13.01	9.18	1.81	13.79	9.15	1.83	14.58	9.74	1.85
	10	10.22	7.82	1.83	11.38	7.86	1.86	11.77	8.55	1.87	12.54	8.58	1.89	12.93	9.26	1.90	13.71	9.22	1.92	14.48	9.83	1.94
	15	10.13	7.89	2.11	11.29	7.94	2.14	11.67	8.63	2.15	12.44	8.66	2.17	12.83	9.35	2.18	13.60	9.31	2.20	14.37	9.92	2.23
	20	10.34	7.59	2.51	11.52	7.63	2.55	11.91	8.30	2.57	12.70	8.33	2.59	13.09	8.99	2.60	13.87	8.96	2.63	14.66	9.54	2.66
	25	10.87	8.01	2.94	12.10	8.06	2.98	12.52	8.76	3.00	13.34	8.79	3.03	13.76	9.49	3.04	14.58	9.45	3.07	15.41	10.07	3.11
	30	11.31	7.94	4.55	12.59	7.99	4.62	13.02	8.69	4.64	13.88	8.72	4.69	14.31	9.41	4.71	15.17	9.37	4.76	16.03	9.99	4.81
	35	11.06	7.90	4.79	12.32	7.94	4.87	12.74	8.64	4.89	13.58	8.66	4.94	14.00	9.36	4.97	14.84	9.32	5.02	15.68	9.93	5.07
	40	10.14	7.46	4.87	11.30	7.50	4.94	11.68	8.15	4.97	12.45	8.18	5.02	12.84	8.83	5.04	13.61	8.80	5.09	14.38	9.37	5.14
	46	8.44	6.75	4.20	9.40	6.79	4.27	9.72	7.39	4.29	10.36	7.41	4.33	10.68	8.00	4.36	11.32	7.97	4.40	11.96	8.49	4.44

■ MODEL: AB∗G24LV x 2

AFR	32.7

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	11.87	8.60	2.12	13.22	8.65	2.16	13.68	9.41	2.17	14.58	9.44	2.19	15.03	10.19	2.20	15.93	10.15	2.22	16.83	10.82	2.24
	-10	11.75	8.58	2.21	13.09	8.63	2.25	13.54	9.38	2.26	14.43	9.41	2.28	14.88	10.16	2.29	15.77	10.12	2.32	16.66	10.78	2.34
	0	11.69	8.45	2.30	13.03	8.50	2.34	13.47	9.24	2.35	14.36	9.27	2.37	14.80	10.01	2.39	15.69	9.97	2.41	16.58	10.62	2.43
	5	11.59	8.47	2.35	12.91	8.52	2.39	13.35	9.26	2.40	14.24	9.29	2.43	14.68	10.04	2.44	15.56	10.00	2.46	16.44	10.65	2.49
	10	11.51	8.53	2.39	12.83	8.58	2.42	13.26	9.33	2.44	14.14	9.36	2.46	14.58	10.11	2.47	15.45	10.07	2.50	16.32	10.72	2.52
	15	11.53	8.52	2.53	12.85	8.57	2.57	13.29	9.32	2.58	14.16	9.35	2.61	14.60	10.10	2.62	15.48	10.06	2.65	16.35	10.72	2.68
	20	11.90	8.52	3.12	13.26	8.57	3.17	13.71	9.32	3.19	14.61	9.35	3.22	15.07	10.09	3.24	15.97	10.05	3.27	16.87	10.71	3.30
	25	12.40	8.89	3.58	13.81	8.94	3.63	14.28	9.72	3.65	15.23	9.75	3.69	15.70	10.53	3.71	16.64	10.49	3.75	17.58	11.18	3.78
	30	12.78	8.93	5.06	14.24	8.98	5.14	14.73	9.76	5.17	15.70	9.79	5.22	16.18	10.57	5.25	17.15	10.53	5.30	18.12	11.22	5.35
	35	12.64	8.96	5.40	14.08	9.02	5.48	14.56	9.80	5.51	15.52	9.83	5.57	16.00	10.62	5.59	16.96	10.58	5.65	17.92	11.27	5.71
	40	11.62	8.47	5.51	12.94	8.52	5.59	13.38	9.26	5.62	14.26	9.29	5.68	14.71	10.03	5.71	15.59	9.99	5.76	16.47	10.64	5.82
	46	8.88	7.23	4.21	9.89	7.27	4.27	10.23	7.90	4.30	10.90	7.93	4.34	11.24	8.56	4.36	11.92	8.53	4.41	12.59	9.08	4.45

AFR : Air Flow Rate (m^3/min.)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
IP : Input Power (kW)

6-2. HEATING CAPACITY OF SIMULTANEOUS MULTI (TWIN)

6-2-1. COMPACT CASSETTE TYPE

This table is created using the maximum capacity.

■ MODEL: AU∗G18LV x 2

AFR	22.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	10.51	4.33	10.26	4.42	10.01	4.51	9.76	4.60	9.51	4.69
	-10	-11	11.51	4.33	11.23	4.42	10.96	4.51	10.69	4.60	10.41	4.69
	-5	-7	12.44	4.33	12.14	4.42	11.84	4.51	11.55	4.60	11.25	4.69
	0	-2	13.42	4.33	13.10	4.42	12.78	4.51	12.46	4.60	12.14	4.69
	5	3	14.39	4.33	14.05	4.42	13.71	4.51	13.36	4.60	13.02	4.69
	7	6	14.70	4.33	14.35	4.42	14.00	4.51	13.65	4.60	13.30	4.69
	10	8	15.05	4.27	14.69	4.36	14.33	4.45	13.97	4.54	13.61	4.63
	15	10	15.42	4.20	15.06	4.29	14.69	4.37	14.32	4.46	13.95	4.53
	20	15	15.79	4.15	15.42	4.24	15.04	4.33	14.66	4.41	14.29	4.48
	24	18	16.14	4.10	15.76	4.19	15.38	4.27	14.99	4.36	14.61	4.43

■ MODEL: AU∗G22LV x 2

AFR	34.3

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	11.48	4.52	11.21	4.61	10.94	4.70	10.66	4.80	10.39	4.89
	-10	-11	12.99	4.88	12.68	4.98	12.37	5.08	12.06	5.18	11.75	5.29
	-5	-7	14.11	5.02	13.77	5.12	13.44	5.23	13.10	5.33	12.77	5.44
	0	-2	15.34	5.02	14.97	5.12	14.61	5.23	14.24	5.33	13.88	5.44
	5	3	16.52	5.02	16.13	5.12	15.74	5.23	15.34	5.33	14.95	5.44
	7	6	17.01	5.02	16.61	5.12	16.20	5.23	15.80	5.33	15.39	5.44
	10	8	17.42	5.02	17.01	5.12	16.59	5.23	16.18	5.33	15.76	5.44
	15	10	18.02	4.96	17.59	5.06	17.17	5.17	16.74	5.27	16.31	5.35
	20	15	18.73	4.87	18.29	4.97	17.84	5.07	17.40	5.18	16.95	5.25
	24	18	19.23	4.75	18.77	4.85	18.31	4.95	17.85	5.05	17.40	5.13

■ MODEL: AU∗G24LV x 2

AFR	34.3

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	12.21	5.24	11.92	5.35	11.63	5.46	11.33	5.57	11.04	5.68
	-10	-11	13.79	5.42	13.46	5.53	13.13	5.64	12.80	5.75	12.47	5.87
	-5	-7	15.43	5.64	15.06	5.76	14.69	5.88	14.33	6.00	13.96	6.11
	0	-2	16.68	5.64	16.29	5.76	15.89	5.88	15.49	6.00	15.10	6.12
	5	3	18.30	5.65	17.86	5.76	17.43	5.88	16.99	6.00	16.56	6.12
	7	6	18.90	5.64	18.45	5.76	18.00	5.88	17.55	6.00	17.10	6.11
	10	8	19.24	5.64	18.78	5.76	18.32	5.88	17.87	6.00	17.41	6.11
	15	10	19.67	5.59	19.20	5.71	18.73	5.83	18.27	5.94	17.80	6.03
	20	15	20.59	5.53	20.10	5.65	19.61	5.76	19.12	5.88	18.63	5.96
	24	18	20.88	5.46	20.38	5.58	19.88	5.69	19.39	5.80	18.89	5.89

AFR: Air Flow Rate (m^3/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

6-2-2. SLIM DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G18LL x 2

AFR	31.3

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
	-15	-16	10.51	4.33	10.26	4.42	10.01	4.51	9.76	4.60	9.51	4.69
	-10	-11	11.51	4.33	11.23	4.42	10.96	4.51	10.69	4.60	10.41	4.69
	-5	-7	12.44	4.33	12.14	4.42	11.84	4.51	11.55	4.60	11.25	4.69
	0	-2	13.42	4.33	13.10	4.42	12.78	4.51	12.46	4.60	12.14	4.69
	5	3	14.39	4.33	14.05	4.42	13.71	4.51	13.36	4.60	13.02	4.69
	7	6	14.70	4.33	14.35	4.42	14.00	4.51	13.65	4.60	13.30	4.69
	10	8	15.05	4.27	14.69	4.36	14.33	4.45	13.97	4.54	13.61	4.63
	15	10	15.42	4.20	15.06	4.29	14.69	4.37	14.32	4.46	13.95	4.53
	20	15	15.79	4.15	15.42	4.24	15.04	4.33	14.66	4.41	14.29	4.48
	24	18	16.14	4.10	15.76	4.19	15.38	4.27	14.99	4.36	14.61	4.43

AFR: Air Flow Rate (m^3/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

6-2-3. DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G22LM x 2

AFR	36.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	10.91	4.71	10.65	4.81	10.39	4.91	10.13	5.01	9.87	5.11
	-10	-11	12.16	4.96	11.87	5.06	11.58	5.17	11.29	5.27	11.00	5.37
	-5	-7	13.54	5.15	13.22	5.26	12.90	5.37	12.58	5.48	12.25	5.58
	0	-2	15.13	5.16	14.77	5.27	14.41	5.37	14.04	5.48	13.68	5.59
	5	3	16.44	5.16	16.05	5.26	15.66	5.37	15.27	5.48	14.88	5.59
	7	6	17.01	5.15	16.61	5.26	16.20	5.37	15.80	5.48	15.39	5.58
	10	8	17.29	5.16	16.88	5.26	16.47	5.37	16.05	5.48	15.64	5.59
	15	10	17.83	5.08	17.41	5.18	16.98	5.29	16.56	5.40	16.13	5.48
	20	15	18.52	4.96	18.08	5.06	17.64	5.16	17.20	5.27	16.76	5.34
	24	18	19.15	4.87	18.69	4.97	18.24	5.07	17.78	5.17	17.33	5.25

■ MODEL: AR∗G24LM x 2

AFR	36.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	11.60	5.43	11.32	5.54	11.05	5.65	10.77	5.76	10.49	5.88
	-10	-11	13.36	5.70	13.04	5.82	12.72	5.94	12.40	6.06	12.08	6.18
	-5	-7	14.86	5.91	14.51	6.04	14.15	6.16	13.80	6.28	13.44	6.41
	0	-2	16.43	5.91	16.04	6.03	15.65	6.16	15.26	6.28	14.86	6.40
	5	3	18.18	5.91	17.75	6.04	17.31	6.16	16.88	6.28	16.45	6.41
	7	6	18.90	5.91	18.45	6.04	18.00	6.16	17.55	6.28	17.10	6.41
	10	8	19.30	5.91	18.84	6.04	18.38	6.16	17.92	6.28	17.46	6.41
	15	10	19.77	5.83	19.30	5.95	18.82	6.07	18.35	6.19	17.88	6.28
	20	15	20.59	5.70	20.10	5.82	19.61	5.94	19.12	6.05	18.63	6.14
	24	18	21.11	5.62	20.61	5.74	20.10	5.86	19.60	5.98	19.10	6.07

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

6-2-4. FLOOR / CEILING TYPE

This table is created using the maximum capacity.

■ MODEL: AB∗G18LV x 2

AFR	26.0

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	10.51	4.33	10.26	4.42	10.01	4.51	9.76	4.60	9.51	4.69
	-10	-11	11.51	4.33	11.23	4.42	10.96	4.51	10.69	4.60	10.41	4.69
	-5	-7	12.44	4.33	12.14	4.42	11.84	4.51	11.55	4.60	11.25	4.69
	0	-2	13.42	4.33	13.10	4.42	12.78	4.51	12.46	4.60	12.14	4.69
	5	3	14.39	4.33	14.05	4.42	13.71	4.51	13.36	4.60	13.02	4.69
	7	6	14.70	4.33	14.35	4.42	14.00	4.51	13.65	4.60	13.30	4.69
	10	8	15.05	4.27	14.69	4.36	14.33	4.45	13.97	4.54	13.61	4.63
	15	10	15.42	4.20	15.06	4.29	14.69	4.37	14.32	4.46	13.95	4.53
	20	15	15.79	4.15	15.42	4.24	15.04	4.33	14.66	4.41	14.29	4.48
	24	18	16.14	4.10	15.76	4.19	15.38	4.27	14.99	4.36	14.61	4.43

■ MODEL: AB∗G22LV x 2

AFR	32.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	11.48	4.52	11.21	4.61	10.94	4.70	10.66	4.80	10.39	4.89
	-10	-11	12.99	4.88	12.68	4.98	12.37	5.08	12.06	5.18	11.75	5.29
	-5	-7	14.11	5.02	13.77	5.12	13.44	5.23	13.10	5.33	12.77	5.44
	0	-2	15.34	5.02	14.97	5.12	14.61	5.23	14.24	5.33	13.88	5.44
	5	3	16.52	5.02	16.13	5.12	15.74	5.23	15.34	5.33	14.95	5.44
	7	6	17.01	5.02	16.61	5.12	16.20	5.23	15.80	5.33	15.39	5.44
	10	8	17.42	5.02	17.01	5.12	16.59	5.23	16.18	5.33	15.76	5.44
	15	10	18.02	4.96	17.59	5.06	17.17	5.17	16.74	5.27	16.31	5.35
	20	15	18.73	4.87	18.29	4.97	17.84	5.07	17.40	5.18	16.95	5.25
	24	18	19.23	4.75	18.77	4.85	18.31	4.95	17.85	5.05	17.40	5.13

■ MODEL: AB∗G24LV x 2

AFR	32.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	12.21	5.24	11.92	5.35	11.63	5.46	11.33	5.57	11.04	5.68
	-10	-11	13.79	5.42	13.46	5.53	13.13	5.64	12.80	5.75	12.47	5.87
	-5	-7	15.43	5.64	15.06	5.76	14.69	5.88	14.33	6.00	13.96	6.11
	0	-2	16.68	5.64	16.29	5.76	15.89	5.88	15.49	6.00	15.10	6.12
	5	3	18.30	5.65	17.86	5.76	17.43	5.88	16.99	6.00	16.56	6.12
	7	6	18.90	5.64	18.45	5.76	18.00	5.88	17.55	6.00	17.10	6.11
	10	8	19.24	5.64	18.78	5.76	18.32	5.88	17.87	6.00	17.41	6.11
	15	10	19.67	5.59	19.20	5.71	18.73	5.83	18.27	5.94	17.80	6.03
	20	15	20.59	5.53	20.10	5.65	19.61	5.76	19.12	5.88	18.63	5.96
	24	18	20.88	5.46	20.38	5.58	19.88	5.69	19.39	5.80	18.89	5.89

AFR: Air Flow Rate (m^3/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

6-3. COOLING CAPACITY OF SIMULTANEOUS MULTI (TRIPLE)

6-3-1. COMPACT CASSETTE TYPE

This table is created using the maximum capacity.

■ MODEL: AU∗G18LV x 3

AFR	34.0

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	12.20	9.30	2.16	13.59	9.36	2.19	14.05	10.17	2.20	14.98	10.21	2.22	15.44	11.02	2.23	16.37	10.98	2.26	17.30	11.69	2.28
	-10	12.13	9.32	2.24	13.52	9.38	2.27	13.98	10.20	2.29	14.90	10.23	2.31	15.36	11.05	2.32	16.28	11.00	2.34	17.20	11.72	2.37
	0	12.08	9.16	2.35	13.46	9.21	2.38	13.92	10.02	2.39	14.84	10.05	2.42	15.29	10.85	2.43	16.21	10.81	2.45	17.13	11.51	2.48
	5	11.96	9.19	2.40	13.32	9.25	2.43	13.78	10.05	2.45	14.69	10.08	2.47	15.14	10.89	2.48	16.05	10.85	2.51	16.96	11.55	2.53
	10	11.72	9.15	2.44	13.05	9.21	2.47	13.50	10.01	2.49	14.39	10.04	2.51	14.83	10.84	2.52	15.72	10.80	2.55	16.61	11.50	2.57
	15	11.81	9.20	2.55	13.16	9.25	2.59	13.61	10.06	2.60	14.51	10.09	2.63	14.95	10.90	2.64	15.85	10.85	2.67	16.75	11.56	2.69
	20	12.08	9.04	3.18	13.46	9.09	3.23	13.92	9.88	3.25	14.84	9.92	3.28	15.30	10.71	3.30	16.21	10.67	3.33	17.13	11.36	3.37
	25	12.64	9.47	3.67	14.08	9.53	3.72	14.56	10.36	3.74	15.52	10.39	3.78	16.00	11.22	3.80	16.96	11.18	3.84	17.92	11.90	3.88
	30	12.80	9.28	5.13	14.26	9.33	5.21	14.75	10.14	5.23	15.72	10.18	5.29	16.20	10.99	5.31	17.18	10.95	5.37	18.15	11.66	5.42
	35	12.64	9.33	5.49	14.08	9.39	5.57	14.56	10.21	5.60	15.52	10.24	5.66	16.00	11.06	5.69	16.96	11.01	5.74	17.92	11.73	5.80
	40	11.95	9.06	5.58	13.31	9.12	5.66	13.77	9.91	5.69	14.67	9.94	5.75	15.13	10.74	5.78	16.04	10.70	5.84	16.94	11.39	5.89
	46	9.19	7.83	4.28	10.24	7.87	4.34	10.59	8.56	4.37	11.29	8.59	4.41	11.64	9.28	4.43	12.34	9.24	4.48	13.03	9.84	4.52

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
SHC: Sensible Heat Capacity (kW)
IP: Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

6-3-2. SLIM DUCT TYPE

This table is created using the maximum capacity.

■ MODEL: AR∗G18LL x 3

AFR	47.0

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	12.20	9.30	2.16	13.59	9.36	2.19	14.05	10.17	2.20	14.98	10.21	2.22	15.44	11.02	2.23	16.37	10.98	2.26	17.30	11.69	2.28
	-10	12.13	9.32	2.24	13.52	9.38	2.27	13.98	10.20	2.29	14.90	10.23	2.31	15.36	11.05	2.32	16.28	11.00	2.34	17.20	11.72	2.37
	0	12.08	9.16	2.35	13.46	9.21	2.38	13.92	10.02	2.39	14.84	10.05	2.42	15.29	10.85	2.43	16.21	10.81	2.45	17.13	11.51	2.48
	5	11.96	9.19	2.40	13.32	9.25	2.43	13.78	10.05	2.45	14.69	10.08	2.47	15.14	10.89	2.48	16.05	10.85	2.51	16.96	11.55	2.53
	10	11.72	9.15	2.44	13.05	9.21	2.47	13.50	10.01	2.49	14.39	10.04	2.51	14.83	10.84	2.52	15.72	10.80	2.55	16.61	11.50	2.57
	15	11.81	9.20	2.55	13.16	9.25	2.59	13.61	10.06	2.60	14.51	10.09	2.63	14.95	10.90	2.64	15.85	10.85	2.67	16.75	11.56	2.69
	20	12.08	9.04	3.18	13.46	9.09	3.23	13.92	9.88	3.25	14.84	9.92	3.28	15.30	10.71	3.30	16.21	10.67	3.33	17.13	11.36	3.37
	25	12.64	9.47	3.67	14.08	9.53	3.72	14.56	10.36	3.74	15.52	10.39	3.78	16.00	11.22	3.80	16.96	11.18	3.84	17.92	11.90	3.88
	30	12.80	9.28	5.13	14.26	9.33	5.21	14.75	10.14	5.23	15.72	10.18	5.29	16.20	10.99	5.31	17.18	10.95	5.37	18.15	11.66	5.42
	35	12.64	9.33	5.49	14.08	9.39	5.57	14.56	10.21	5.60	15.52	10.24	5.66	16.00	11.06	5.69	16.96	11.01	5.74	17.92	11.73	5.80
	40	11.95	9.06	5.58	13.31	9.12	5.66	13.77	9.91	5.69	14.67	9.94	5.75	15.13	10.74	5.78	16.04	10.70	5.84	16.94	11.39	5.89
	46	9.19	7.83	4.28	10.24	7.87	4.34	10.59	8.56	4.37	11.29	8.59	4.41	11.64	9.28	4.43	12.34	9.24	4.48	13.03	9.84	4.52

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
SHC: Sensible Heat Capacity (kW)
IP: Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

6-3-3. FLOOR / CEILING TYPE

This table is created using the maximum capacity.

■ MODEL: AB∗G18LV x 3

AFR	39.0

		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	12.20	9.30	2.16	13.59	9.36	2.19	14.05	10.17	2.20	14.98	10.21	2.22	15.44	11.02	2.23	16.37	10.98	2.26	17.30	11.69	2.28
	-10	12.13	9.32	2.24	13.52	9.38	2.27	13.98	10.20	2.29	14.90	10.23	2.31	15.36	11.05	2.32	16.28	11.00	2.34	17.20	11.72	2.37
	0	12.08	9.16	2.35	13.46	9.21	2.38	13.92	10.02	2.39	14.84	10.05	2.42	15.29	10.85	2.43	16.21	10.81	2.45	17.13	11.51	2.48
	5	11.96	9.19	2.40	13.32	9.25	2.43	13.78	10.05	2.45	14.69	10.08	2.47	15.14	10.89	2.48	16.05	10.85	2.51	16.96	11.55	2.53
	10	11.72	9.15	2.44	13.05	9.21	2.47	13.50	10.01	2.49	14.39	10.04	2.51	14.83	10.84	2.52	15.72	10.80	2.55	16.61	11.50	2.57
	15	11.81	9.20	2.55	13.16	9.25	2.59	13.61	10.06	2.60	14.51	10.09	2.63	14.95	10.90	2.64	15.85	10.85	2.67	16.75	11.56	2.69
	20	12.08	9.04	3.18	13.46	9.09	3.23	13.92	9.88	3.25	14.84	9.92	3.28	15.30	10.71	3.30	16.21	10.67	3.33	17.13	11.36	3.37
	25	12.64	9.47	3.67	14.08	9.53	3.72	14.56	10.36	3.74	15.52	10.39	3.78	16.00	11.22	3.80	16.96	11.18	3.84	17.92	11.90	3.88
	30	12.80	9.28	5.13	14.26	9.33	5.21	14.75	10.14	5.23	15.72	10.18	5.29	16.20	10.99	5.31	17.18	10.95	5.37	18.15	11.66	5.42
	35	12.64	9.33	5.49	14.08	9.39	5.57	14.56	10.21	5.60	15.52	10.24	5.66	16.00	11.06	5.69	16.96	11.01	5.74	17.92	11.73	5.80
	40	11.95	9.06	5.58	13.31	9.12	5.66	13.77	9.91	5.69	14.67	9.94	5.75	15.13	10.74	5.78	16.04	10.70	5.84	16.94	11.39	5.89
	46	9.19	7.83	4.28	10.24	7.87	4.34	10.59	8.56	4.37	11.29	8.59	4.41	11.64	9.28	4.43	12.34	9.24	4.48	13.03	9.84	4.52

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
SHC: Sensible Heat Capacity (kW)
IP: Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

6-4. HEATING CAPACITY OF SIMULTANEOUS MULTI (TRIPLE)

6-4-1. COMPACT CASSETTE TYPE

This table is created using the maximum capacity.

■ MODEL: AU∗G18LV x 3

AFR	34.0

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	12.51	5.24	12.21	5.35	11.92	5.46	11.62	5.57	11.32	5.68
	-10	-11	14.10	5.41	13.76	5.53	13.43	5.64	13.09	5.75	12.75	5.86
	-5	-7	15.90	5.64	15.52	5.76	15.14	5.88	14.76	5.99	14.39	6.11
	0	-2	17.14	5.65	16.74	5.77	16.33	5.88	15.92	6.00	15.51	6.12
	5	3	18.51	5.65	18.07	5.77	17.63	5.88	17.19	6.00	16.75	6.12
	7	6	18.90	5.64	18.45	5.76	18.00	5.88	17.55	6.00	17.10	6.12
	10	8	19.59	5.65	19.12	5.76	18.66	5.88	18.19	6.00	17.72	6.12
	15	10	20.05	5.59	19.57	5.71	19.10	5.83	18.62	5.94	18.14	6.03
	20	15	21.13	5.53	20.63	5.64	20.12	5.76	19.62	5.87	19.12	5.96
	24	18	21.45	5.46	20.94	5.57	20.43	5.69	19.92	5.80	19.41	5.89

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

6-4-2.SLIM DUCT TYPE

This table is created using the maximum capacity.

■MODEL: AR∗G18LL x 3

AFR	47.0

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	12.51	5.24	12.21	5.35	11.92	5.46	11.62	5.57	11.32	5.68
	-10	-11	14.10	5.41	13.76	5.53	13.43	5.64	13.09	5.75	12.75	5.86
	-5	-7	15.90	5.64	15.52	5.76	15.14	5.88	14.76	5.99	14.39	6.11
	0	-2	17.14	5.65	16.74	5.77	16.33	5.88	15.92	6.00	15.51	6.12
	5	3	18.51	5.65	18.07	5.77	17.63	5.88	17.19	6.00	16.75	6.12
	7	6	18.90	5.64	18.45	5.76	18.00	5.88	17.55	6.00	17.10	6.12
	10	8	19.59	5.65	19.12	5.76	18.66	5.88	18.19	6.00	17.72	6.12
	15	10	20.05	5.59	19.57	5.71	19.10	5.83	18.62	5.94	18.14	6.03
	20	15	21.13	5.53	20.63	5.64	20.12	5.76	19.62	5.87	19.12	5.96
	24	18	21.45	5.46	20.94	5.57	20.43	5.69	19.92	5.80	19.41	5.89

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

6-4-3.FLOOR / CEILING TYPE

This table is created using the maximum capacity.

■ MODEL: AB∗G18LV x 3

AFR	39.0

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	12.51	5.24	12.21	5.35	11.92	5.46	11.62	5.57	11.32	5.68
	-10	-11	14.10	5.41	13.76	5.53	13.43	5.64	13.09	5.75	12.75	5.86
	-5	-7	15.90	5.64	15.52	5.76	15.14	5.88	14.76	5.99	14.39	6.11
	0	-2	17.14	5.65	16.74	5.77	16.33	5.88	15.92	6.00	15.51	6.12
	5	3	18.51	5.65	18.07	5.77	17.63	5.88	17.19	6.00	16.75	6.12
	7	6	18.90	5.64	18.45	5.76	18.00	5.88	17.55	6.00	17.10	6.12
	10	8	19.59	5.65	19.12	5.76	18.66	5.88	18.19	6.00	17.72	6.12
	15	10	20.05	5.59	19.57	5.71	19.10	5.83	18.62	5.94	18.14	6.03
	20	15	21.13	5.53	20.63	5.64	20.12	5.76	19.62	5.87	19.12	5.96
	24	18	21.45	5.46	20.94	5.57	20.43	5.69	19.92	5.80	19.41	5.89

AFR: Air Flow Rate (m³/min.)
TC: Total Capacity (kW)
IP: Input Power (kW)

INDOOR UNITS (SIMULTANEOUS MULTI)

7. FAN PERFORMANCE

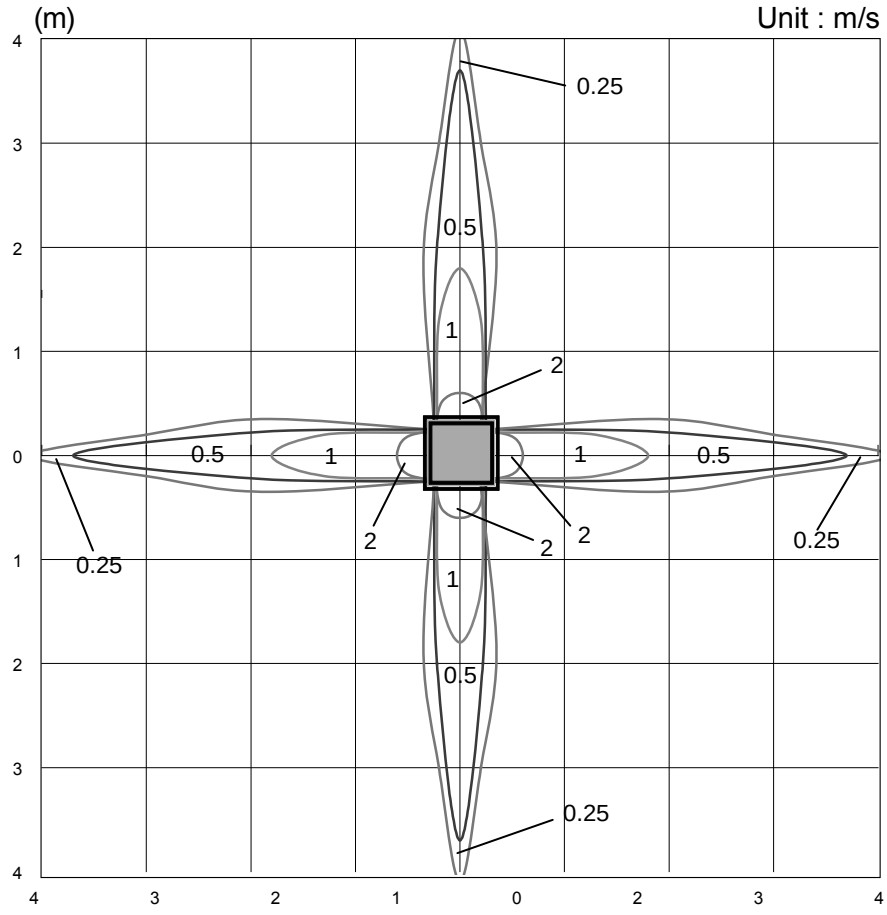
7-1. COMPACT CASSETTE TYPE

7-1-1. AIR VELOCITY DISTRIBUTION

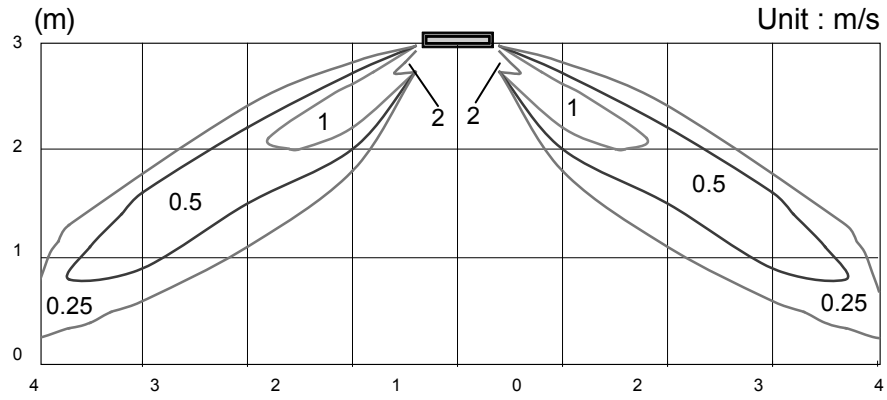
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■ MODEL: AU∗G18LV

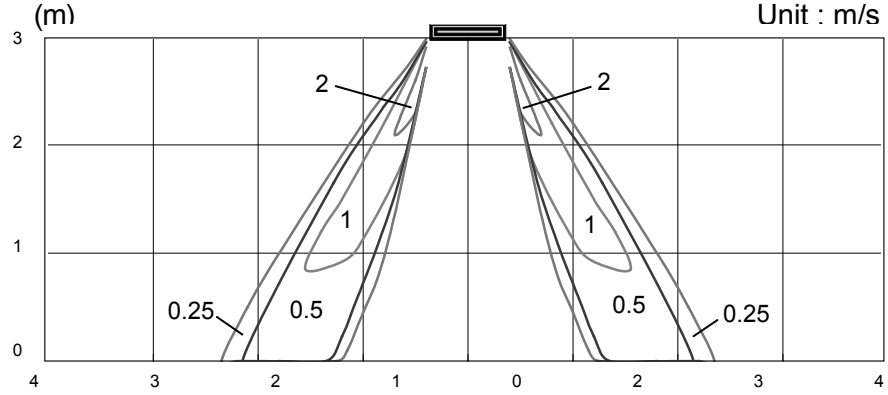
● 4-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



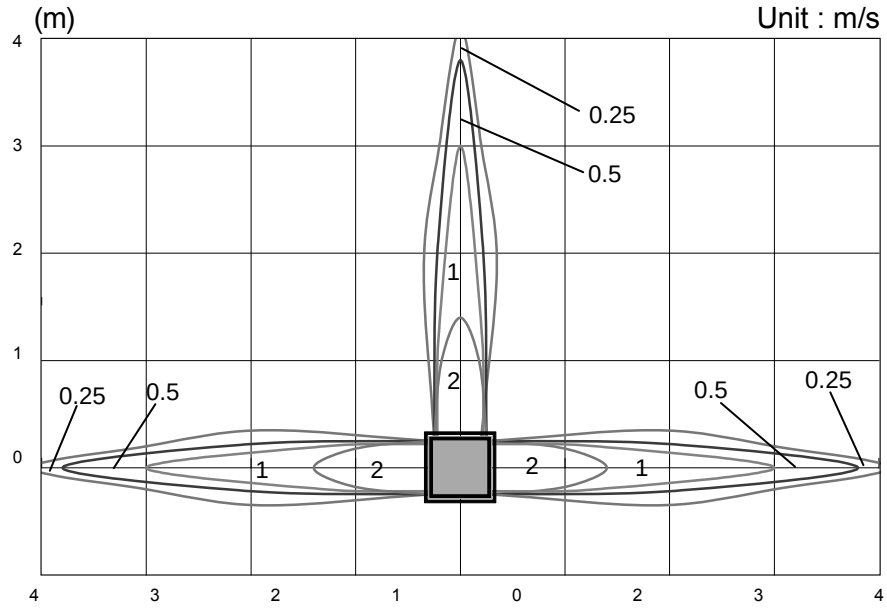
SIDE VIEW
VERTICAL FLAP
: Downward

INDOOR UNITS
(SIMULTANEOUS MULTI)

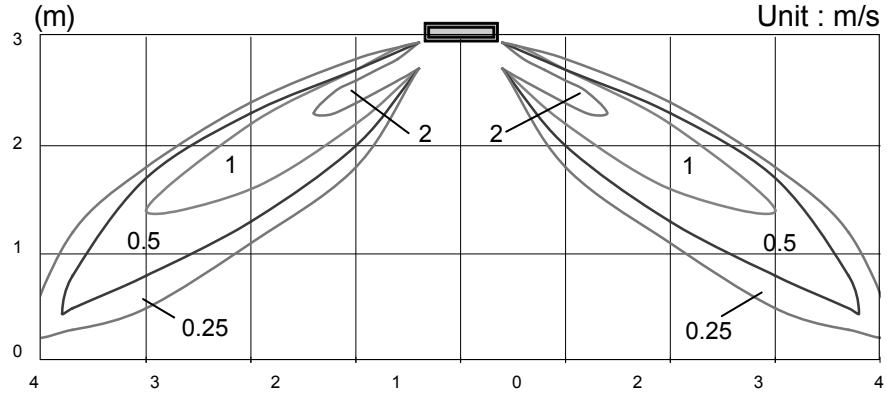
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■MODEL: AU∗G18LV

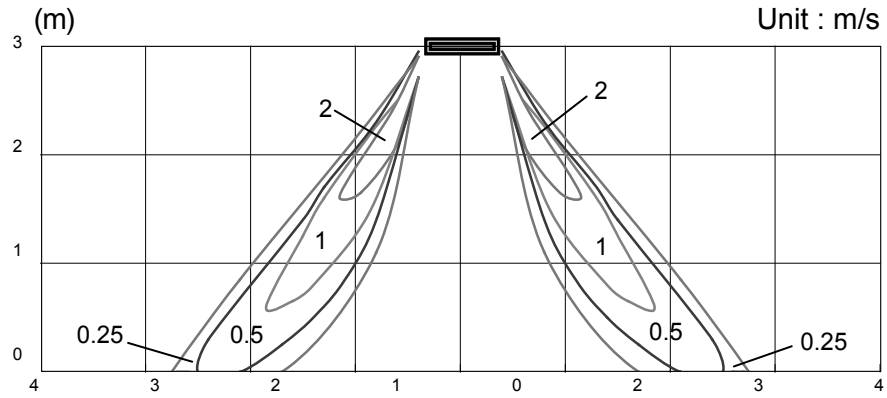
●3-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



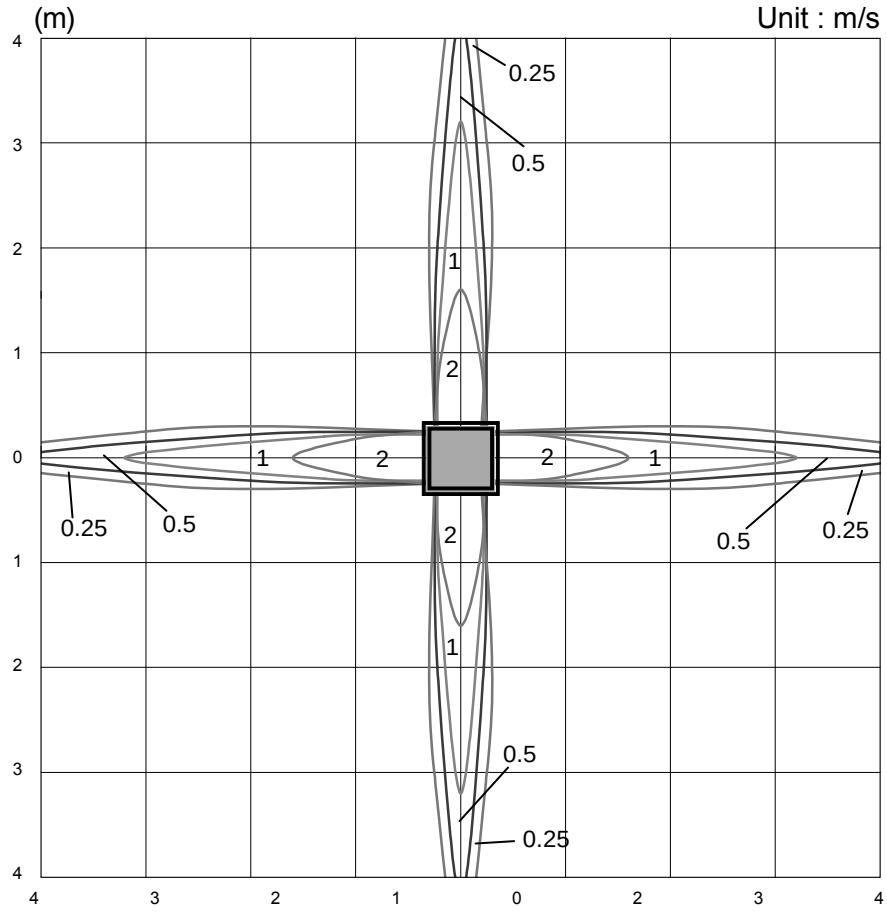
SIDE VIEW
VERTICAL FLAP
: Downward

INDOOR UNITS
(SIMULTANEOUS MULTI)

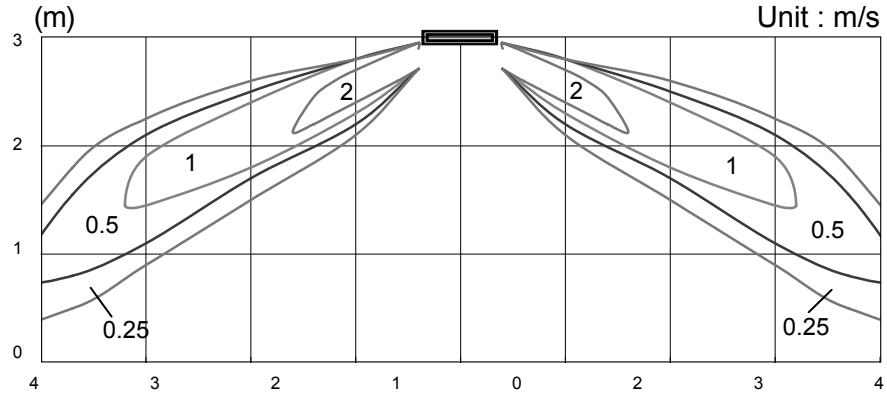
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■MODEL: AU∗G22LV

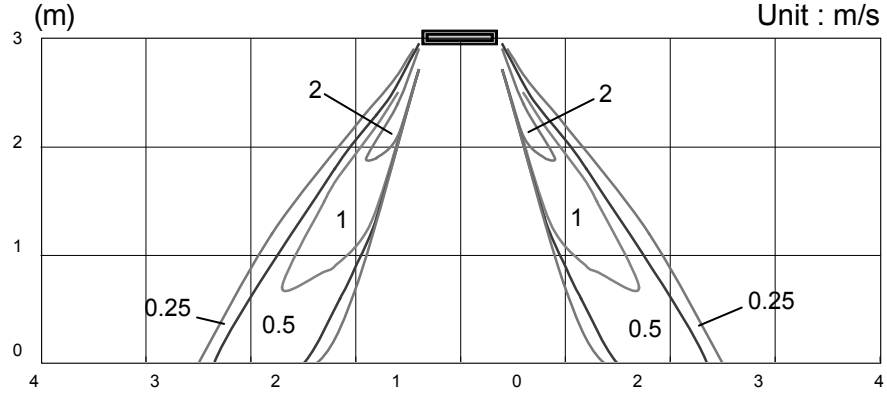
●4-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



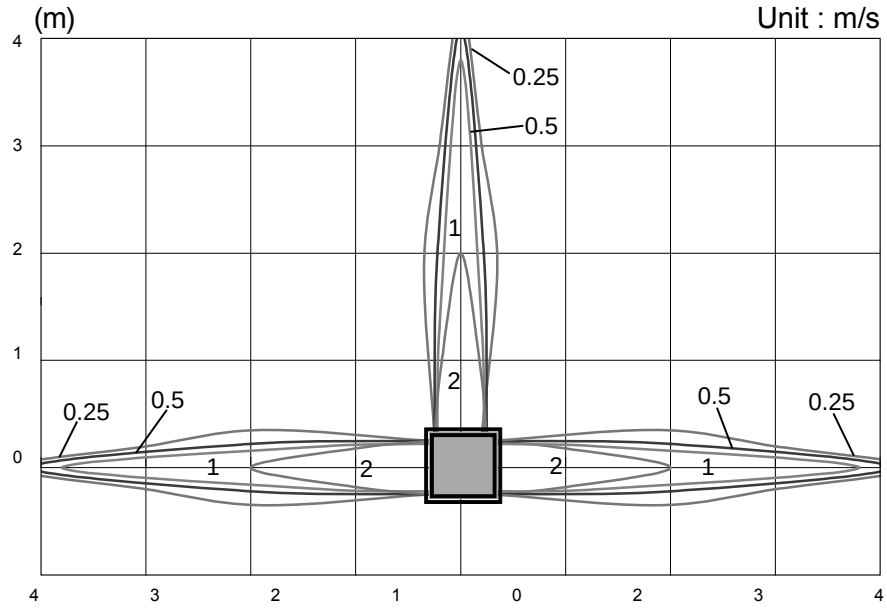
SIDE VIEW
VERTICAL FLAP
: Downward

INDOOR UNITS
(SIMULTANEOUS MULTI)

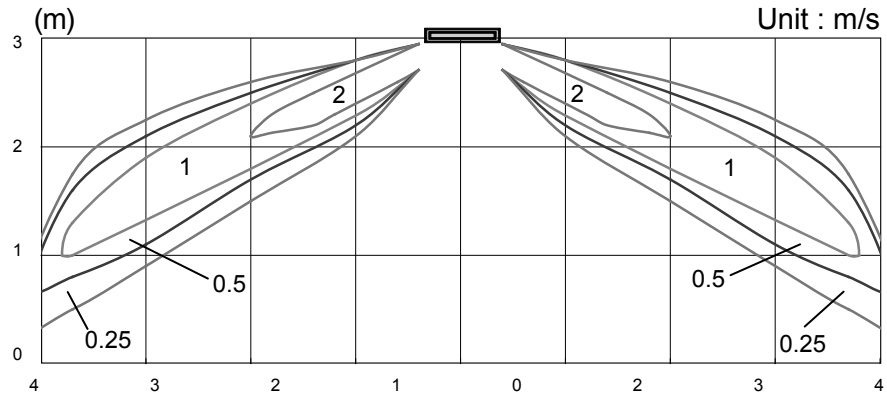
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■MODEL: AU∗G22LV

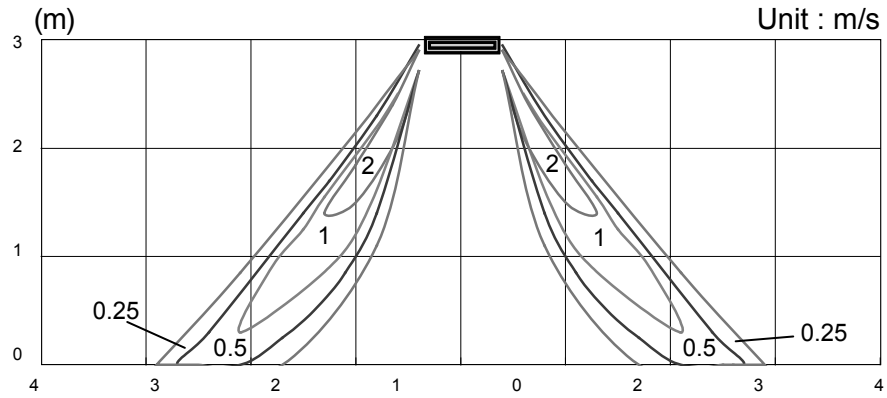
●3-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



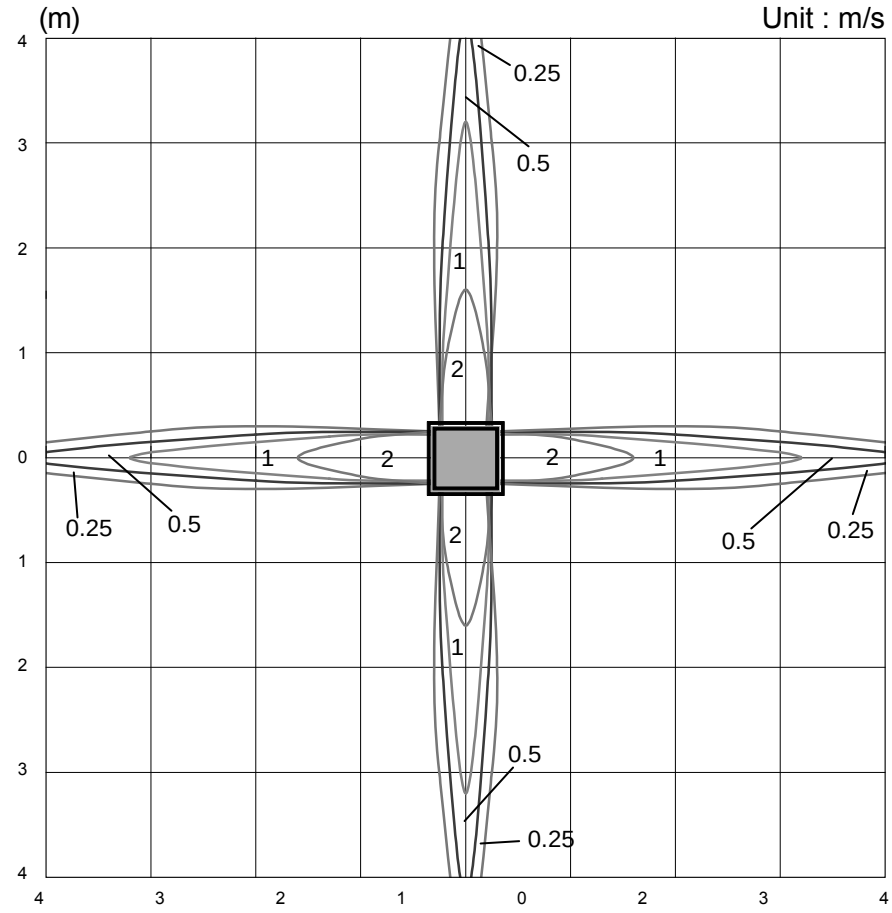
SIDE VIEW
VERTICAL FLAP
: Downward

INDOOR UNITS
(SIMULTANEOUS MULTI)

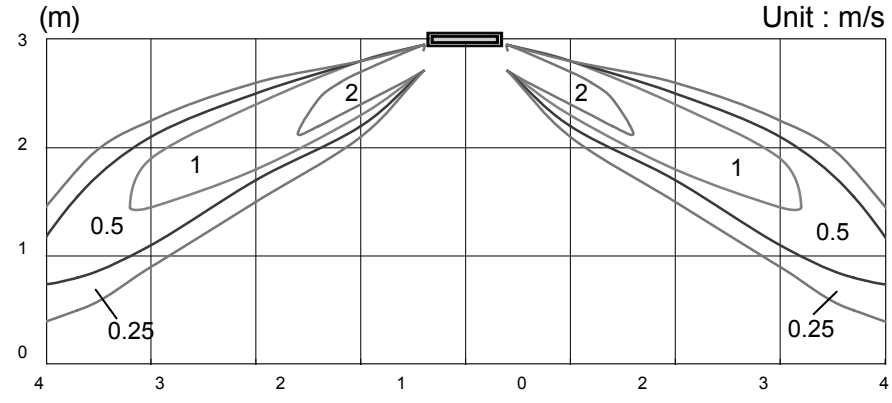
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■MODEL: AU∗G24LV

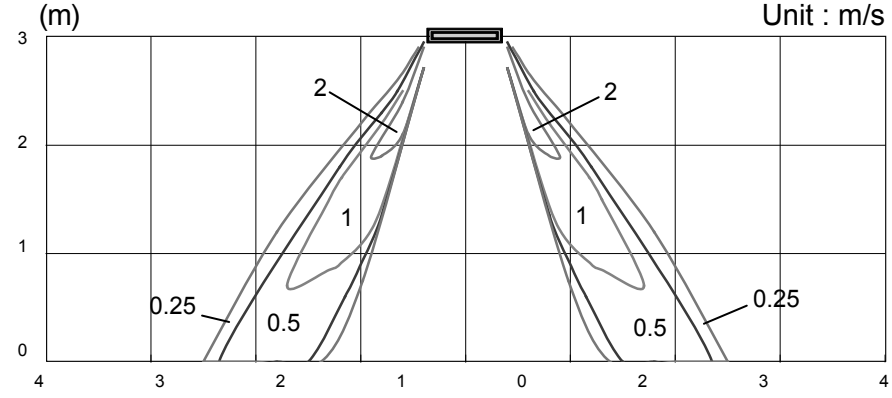
●4-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



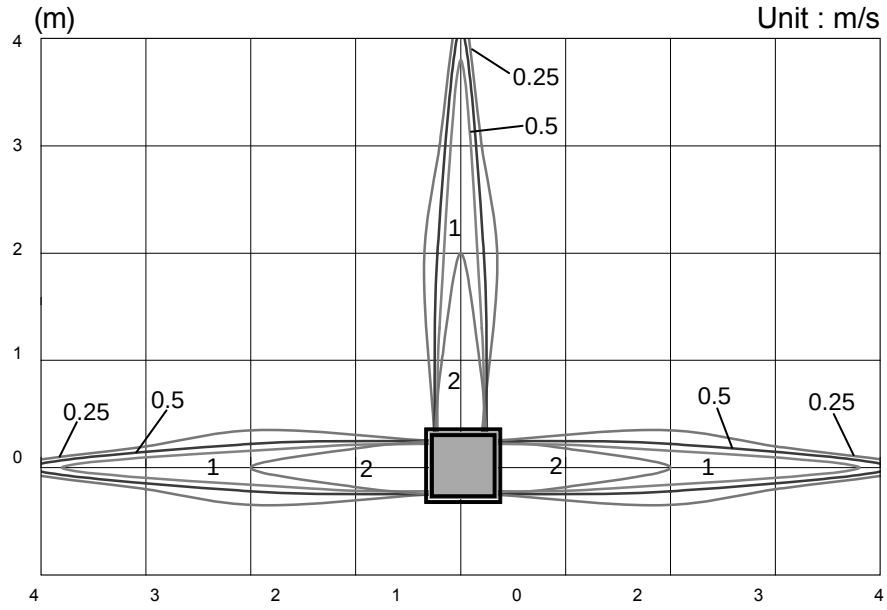
SIDE VIEW
VERTICAL FLAP
: Downward

INDOOR UNITS
(SIMULTANEOUS MULTI)

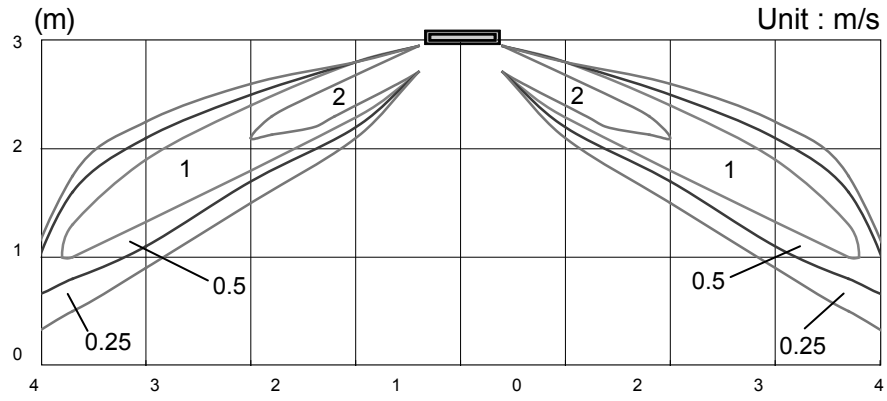
Note:
Condition
Fan speed : High
Operation mode : FAN
Ceiling mode : Standard

■MODEL: AU∗G24LV

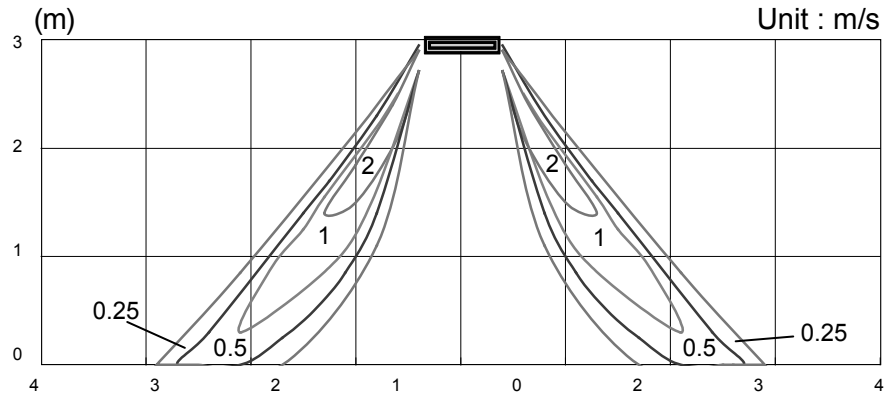
●3-way air outlet



TOP VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Upward



SIDE VIEW
VERTICAL FLAP
: Downward

7-1-2. AIR FLOW

■ MODEL: AU∗G18LV (STANDARD CEILING MODE)

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	730	m^3/h	680
		l/s	189
		CFM	400
MED	630	m^3/h	580
		l/s	161
		CFM	341
LOW	540	m^3/h	490
		l/s	136
		CFM	288
QUIET	460	m^3/h	410
		l/s	114
		CFM	241

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	830	m^3/h	800
		l/s	222
		CFM	471
MED	730	m^3/h	680
		l/s	189
		CFM	400
LOW	630	m^3/h	580
		l/s	161
		CFM	341
QUIET	500	m^3/h	450
		l/s	125
		CFM	265

INDOOR UNITS (SIMULTANEOUS MULTI)

INDOOR UNITS (SIMULTANEOUS MULTI)

■ MODEL: AU∗G22LV (STANDARD CEILING MODE)

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	960	m^3/h	930
		l/s	258
		CFM	547
MED	850	m^3/h	830
		l/s	231
		CFM	488
LOW	650	m^3/h	600
		l/s	167
		CFM	353
QUIET	500	m^3/h	450
		l/s	125
		CFM	265

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	960	m^3/h	930
		l/s	258
		CFM	547
MED	880	m^3/h	860
		l/s	239
		CFM	506
LOW	740	m^3/h	700
		l/s	194
		CFM	412
QUIET	580	m^3/h	530
		l/s	147
		CFM	312

INDOOR UNITS (SIMULTANEOUS MULTI)

■ MODEL: AU∗G24LV (STANDARD CEILING MODE)

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	960	m^3/h	930
		l/s	258
		CFM	547
MED	850	m^3/h	830
		l/s	231
		CFM	488
LOW	650	m^3/h	600
		l/s	167
		CFM	353
QUIET	500	m^3/h	450
		l/s	125
		CFM	265

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	960	m^3/h	930
		l/s	258
		CFM	547
MED	880	m^3/h	860
		l/s	239
		CFM	506
LOW	740	m^3/h	700
		l/s	194
		CFM	412
QUIET	580	m^3/h	530
		l/s	147
		CFM	312

INDOOR UNITS (SIMULTANEOUS MULTI)

■ MODEL: AU∗G18LV (HIGH CEILING MODE)

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	830	m^3/h	800
		l/s	222
		CFM	471
MED	730	m^3/h	680
		l/s	189
		CFM	400
LOW	640	m^3/h	590
		l/s	164
		CFM	347
QUIET	460	m^3/h	410
		l/s	114
		CFM	241

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	930	m^3/h	900
		l/s	250
		CFM	530
MED	830	m^3/h	800
		l/s	222
		CFM	471
LOW	730	m^3/h	680
		l/s	189
		CFM	400
QUIET	500	m^3/h	450
		l/s	125
		CFM	265

INDOOR UNITS (SIMULTANEOUS MULTI)

■ MODEL: AU∗G22LV (HIGH CEILING MODE)

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1050	m^3/h	1030
		l/s	286
		CFM	606
MED	950	m^3/h	930
		l/s	258
		CFM	547
LOW	750	m^3/h	710
		l/s	197
		CFM	418
QUIET	500	m^3/h	450
		l/s	125
		CFM	265

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1030	m^3/h	1000
		l/s	278
		CFM	589
MED	980	m^3/h	960
		l/s	267
		CFM	565
LOW	840	m^3/h	820
		l/s	228
		CFM	483
QUIET	580	m^3/h	530
		l/s	147
		CFM	312

INDOOR UNITS (SIMULTANEOUS MULTI)

■ MODEL: AU∗G24LV (HIGH CEILING MODE)

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1050	m^3/h	1030
		l/s	286
		CFM	606
MED	950	m^3/h	930
		l/s	258
		CFM	547
LOW	750	m^3/h	710
		l/s	197
		CFM	418
QUIET	500	m^3/h	450
		l/s	125
		CFM	265

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1030	m^3/h	1000
		l/s	278
		CFM	589
MED	980	m^3/h	960
		l/s	267
		CFM	565
LOW	840	m^3/h	820
		l/s	228
		CFM	483
QUIET	580	m^3/h	530
		l/s	147
		CFM	312

7-2. SLIM DUCT TYPE with Auto louver grille kit

7-2-1. AIR VELOCITY AND TEMPERATURE DISTRIBUTION

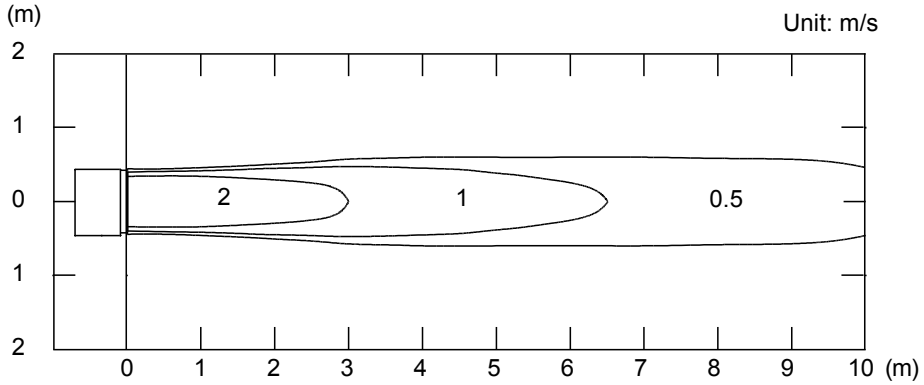
■ MODEL : AR∗G18LL (UTD-GXSB-W)

Note: This data is a measurement of Auto louver grille kit(option) by installing it.

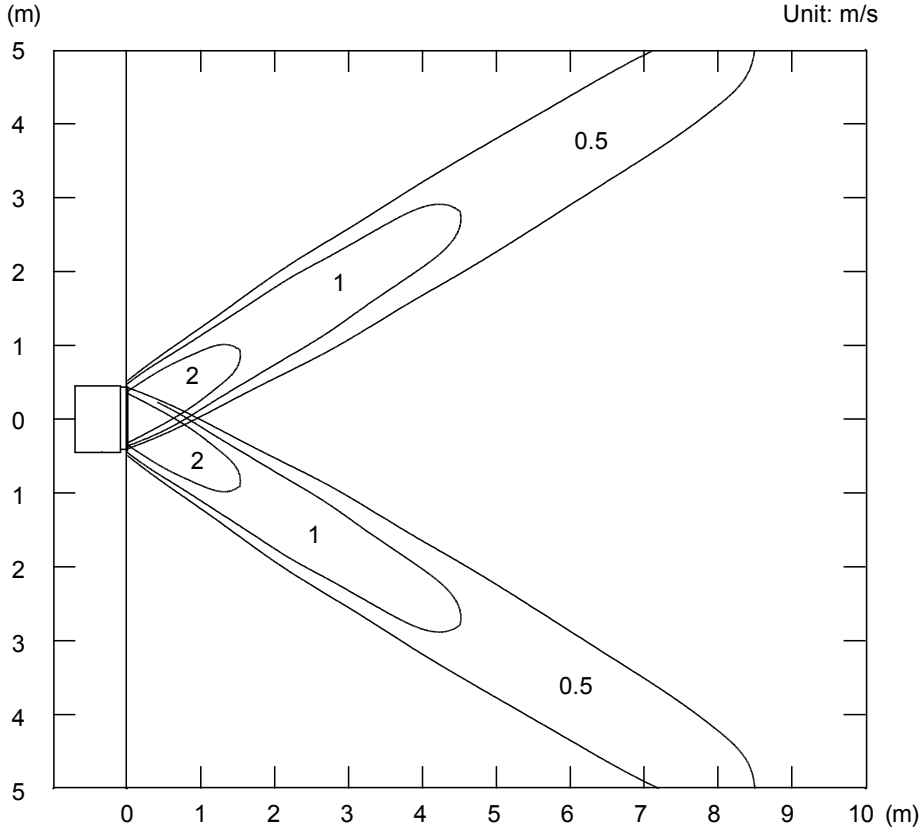
Conditions	
Fan speed	: High
Operation mode	: Fan
Voltage	: 230V

● Air velocity distribution

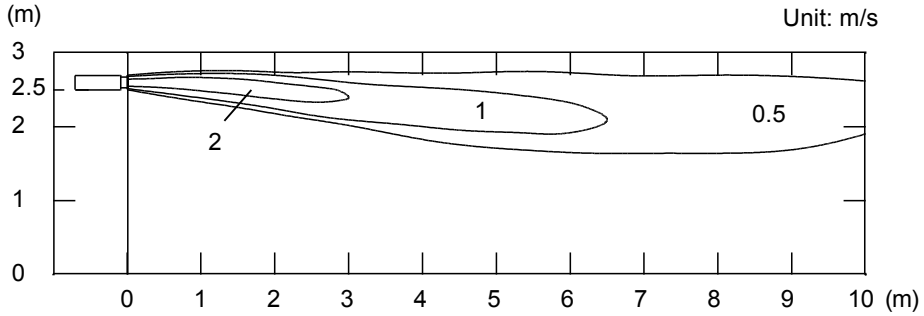
Top view
Vertical flap : Up
Horizontal flap : Center



Top view
Vertical flap : Up
Horizontal flap : Right & Left



Side view
Vertical flap : Up
Horizontal flap : Center

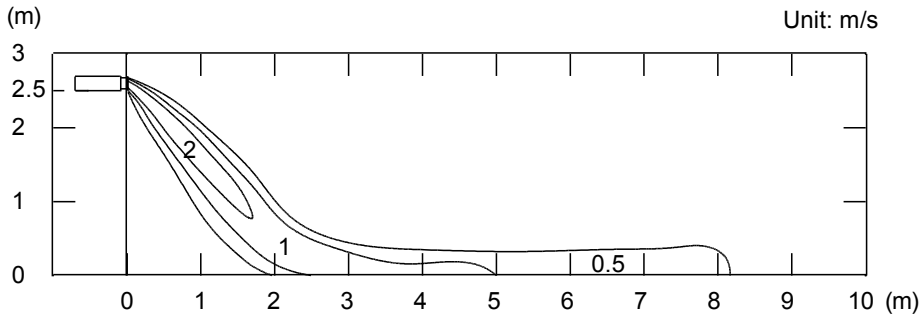


Note: This data is a measurement of Auto louver grille kit(option) by installing it.

Conditions
Fan speed : High
Operation mode : Heat
Voltage : 230V
Reference Data

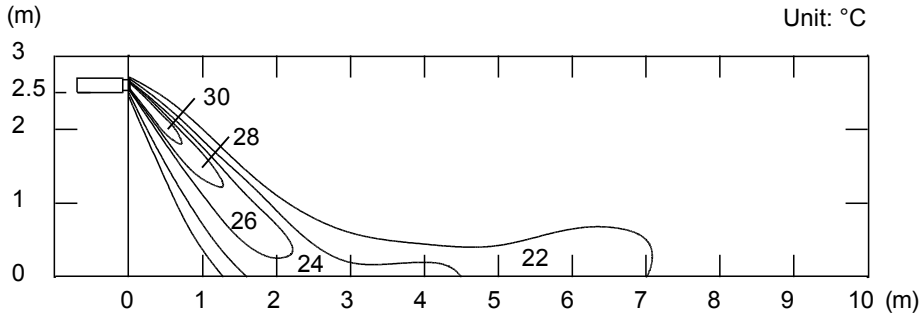
● Air velocity distribution

Side view
Vertical flap : Down
Horizontal flap : Center



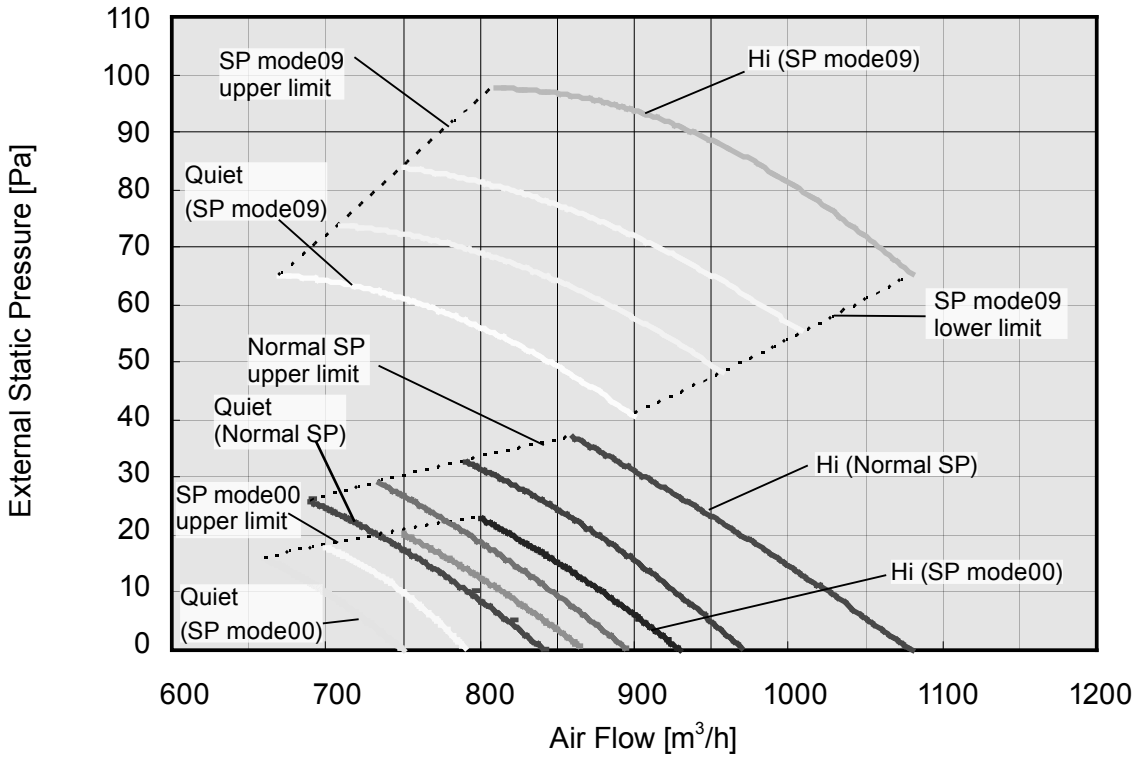
● Air temperature distribution

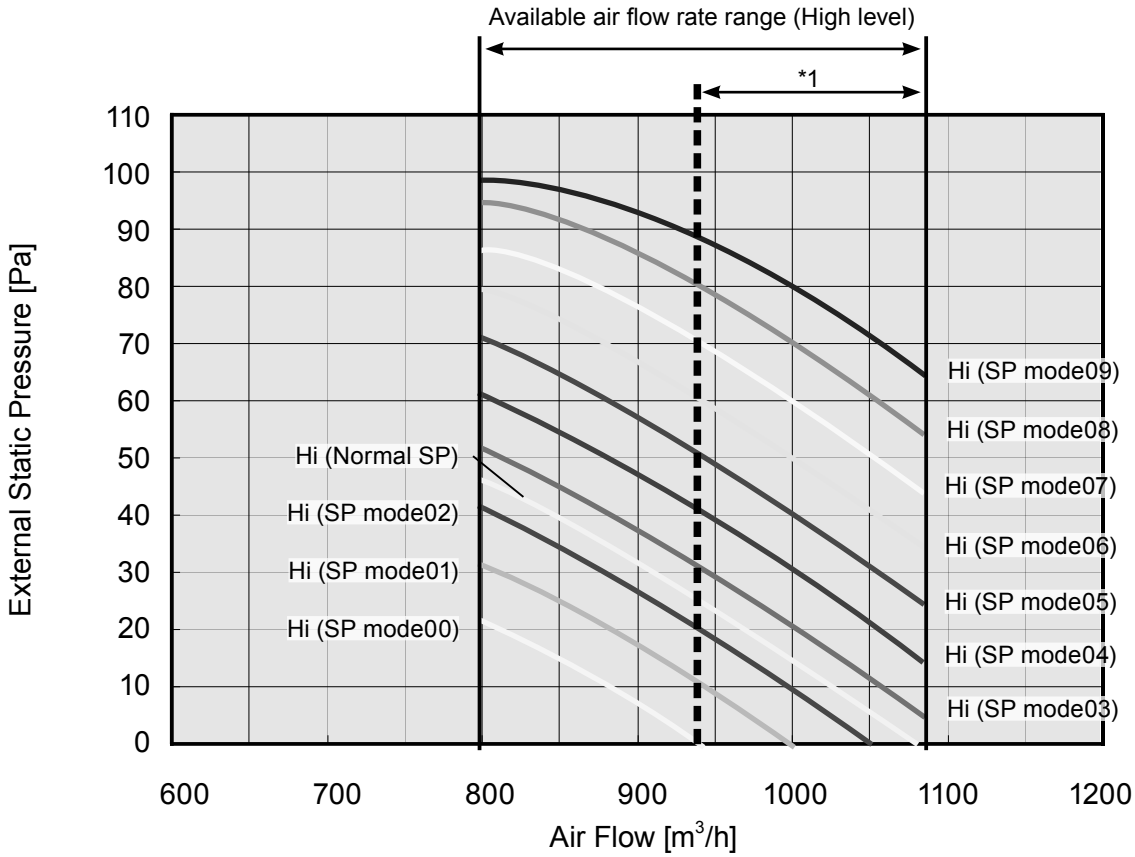
Side view
Vertical flap : Down
Horizontal flap : Center



7-2-2. FAN PERFORMANCE CURVE

■ MODEL : AR∗G18LL

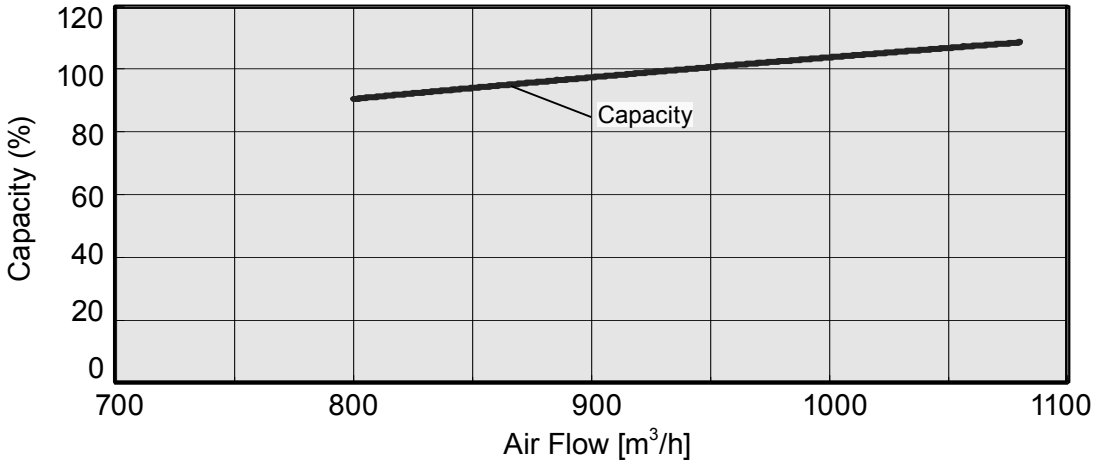




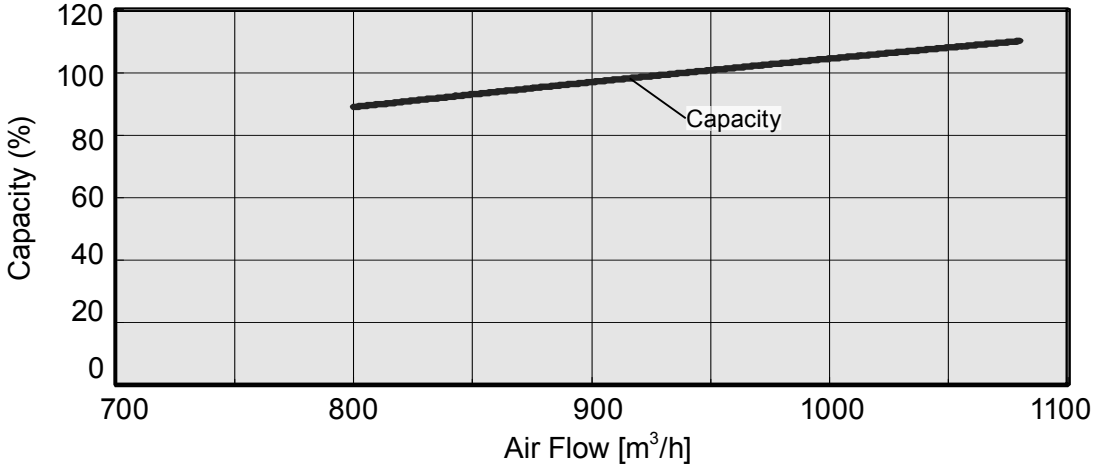
*1: Available air flow rate range when Auto louver grille (option) is installed.
Fan speed : High
Vertical flap : Up

INDOOR UNITS
(SIMULTANEOUS MULTI)

● Cooling



● Heating



7-2-3. AIR FLOW

■ MODEL: AR∗G18LL

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1380	m^3/h	940
		l/s	261
		CFM	553
MED	1300	m^3/h	880
		l/s	244
		CFM	518
LOW	1220	m^3/h	820
		l/s	227
		CFM	483
QUIET	1140	m^3/h	750
		l/s	208
		CFM	441

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1380	m^3/h	940
		l/s	261
		CFM	553
MED	1300	m^3/h	880
		l/s	244
		CFM	518
LOW	1220	m^3/h	820
		l/s	227
		CFM	483
QUIET	1140	m^3/h	750
		l/s	208
		CFM	441

INDOOR UNITS (SIMULTANEOUS MULTI)

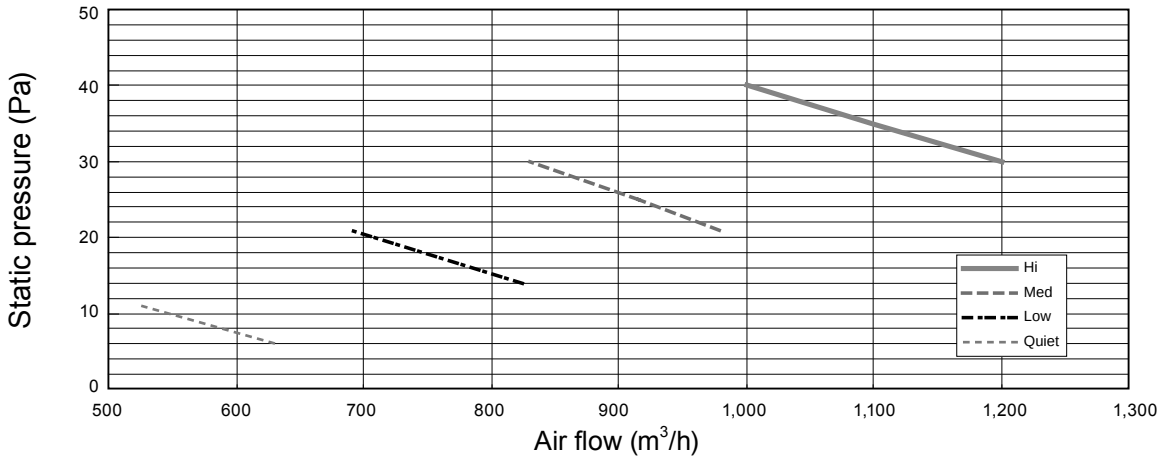
7-3. DUCT TYPE

7-3-1. FAN PERFORMANCE AND CAPACITY

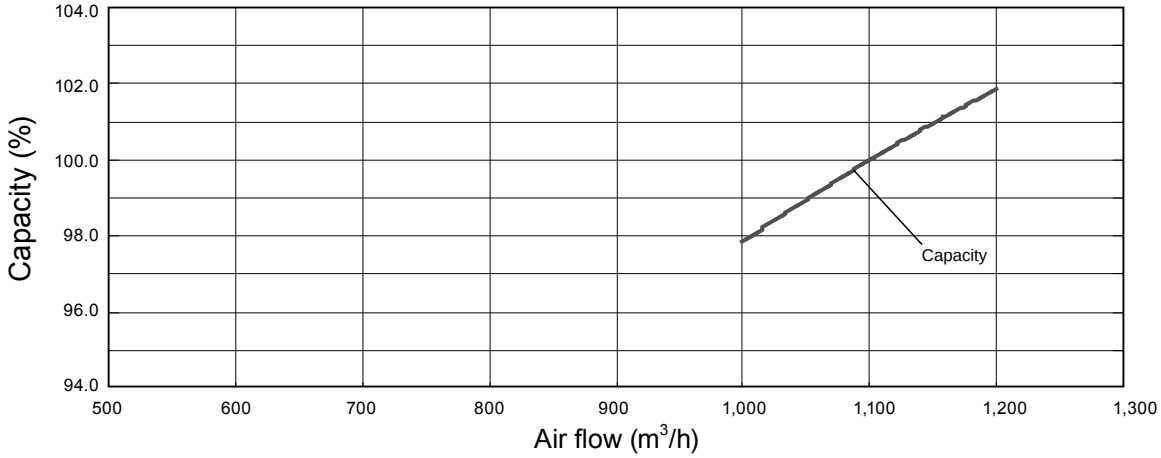
■ MODEL: AR∗G22LM (NORMAL MODE)

			Static pressure (Pa)							
			6	11	14	21	25	30	35	40
FAN SPEED	Hi	m^3/h	-	-	-	-	-	1200	1100	1000
		l/s	-	-	-	-	-	333	306	278
		CFM	-	-	-	-	-	706	647	589
	Med	m^3/h	-	-	-	980	915	830	-	-
		l/s	-	-	-	272	254	231	-	-
		CFM	-	-	-	577	539	489	-	-
	Low	m^3/h	-	-	825	690	-	-	-	-
		l/s	-	-	229	192	-	-	-	-
		CFM	-	-	486	406	-	-	-	-
	Quiet	m^3/h	630	525	-	-	-	-	-	-
		l/s	175	146	-	-	-	-	-	-
		CFM	371	309	-	-	-	-	-	-

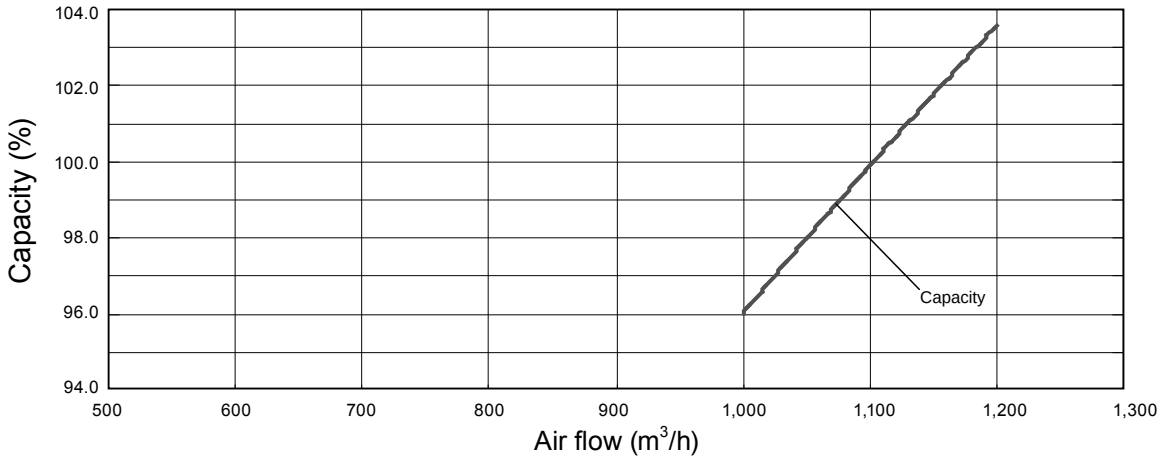
Q-h Characteristic curve



COOLING



HEATING



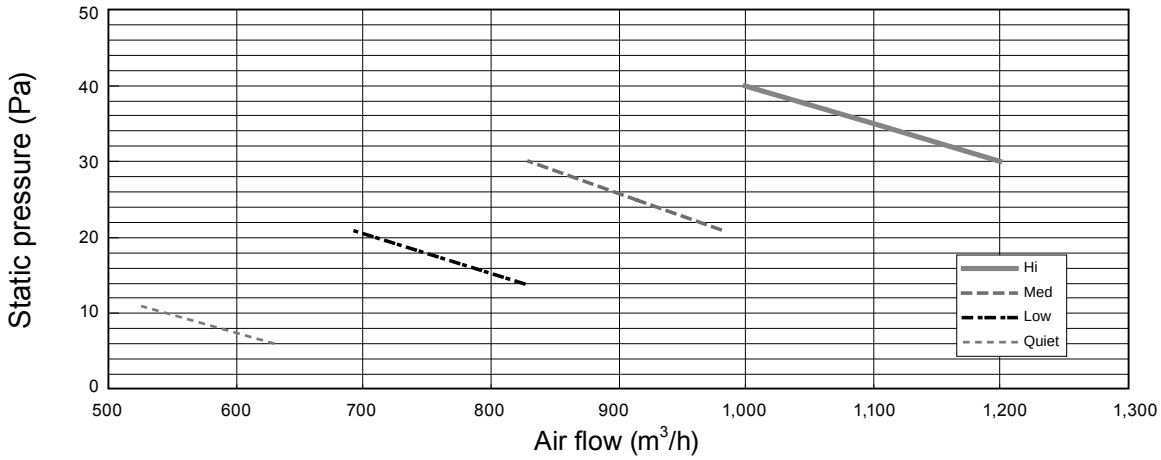
INDOOR UNITS (SIMULTANEOUS MULTI)

INDOOR UNITS (SIMULTANEOUS MULTI)

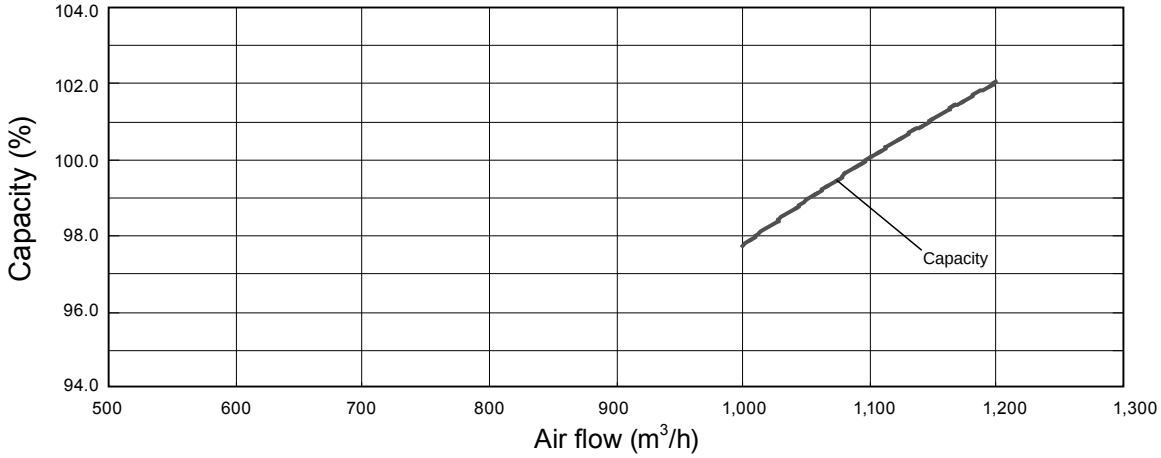
■ MODEL: AR∗G24LM (NORMAL MODE)

			Static pressure (Pa)							
			6	11	14	21	25	30	35	40
FAN SPEED	Hi	m^3/h	-	-	-	-	-	1200	1100	1000
		l/s	-	-	-	-	-	333	306	278
		CFM	-	-	-	-	-	706	647	589
	Med	m^3/h	-	-	-	980	915	830	-	-
		l/s	-	-	-	272	254	231	-	-
		CFM	-	-	-	577	539	489	-	-
	Low	m^3/h	-	-	825	690	-	-	-	-
		l/s	-	-	229	192	-	-	-	-
		CFM	-	-	486	406	-	-	-	-
	Quiet	m^3/h	630	525	-	-	-	-	-	-
		l/s	175	146	-	-	-	-	-	-
		CFM	371	309	-	-	-	-	-	-

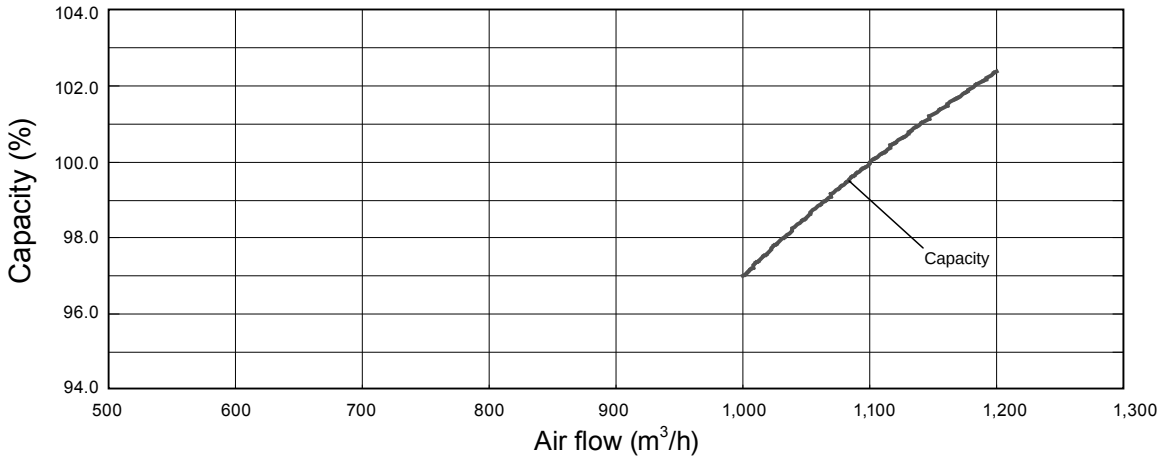
Q-h Characteristic curve



COOLING



HEATING

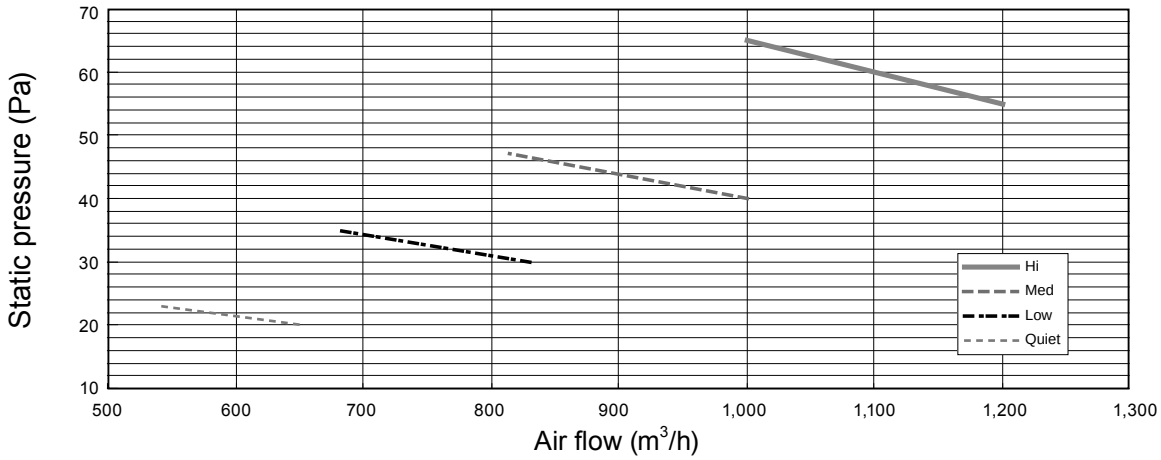


INDOOR UNITS
(SIMULTANEOUS MULTI)

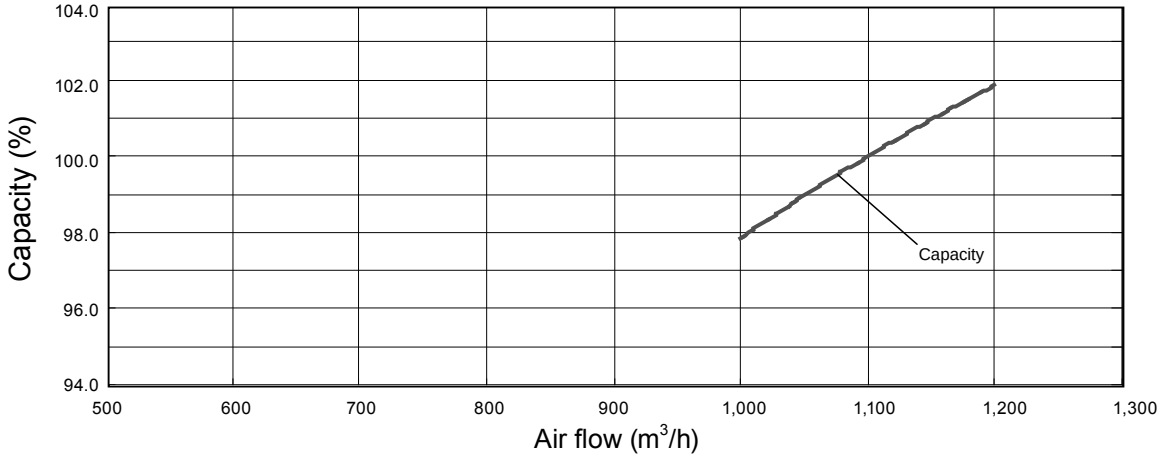
■ MODEL: AR∗G22LM (STATIC PRESSURE MODE 1)

			Static pressure (Pa)							
			20	23	30	35	40	47	55	65
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1200	1000
		l/s	-	-	-	-	-	-	333	278
		CFM	-	-	-	-	-	-	706	589
	Med	m^3/h	-	-	-	-	1000	815	-	-
		l/s	-	-	-	-	278	226	-	-
		CFM	-	-	-	-	589	480	-	-
	Low	m^3/h	-	-	830	680	-	-	-	-
		l/s	-	-	231	189	-	-	-	-
		CFM	-	-	489	400	-	-	-	-
	Quiet	m^3/h	650	540	-	-	-	-	-	-
		l/s	181	150	-	-	-	-	-	-
		CFM	383	318	-	-	-	-	-	-

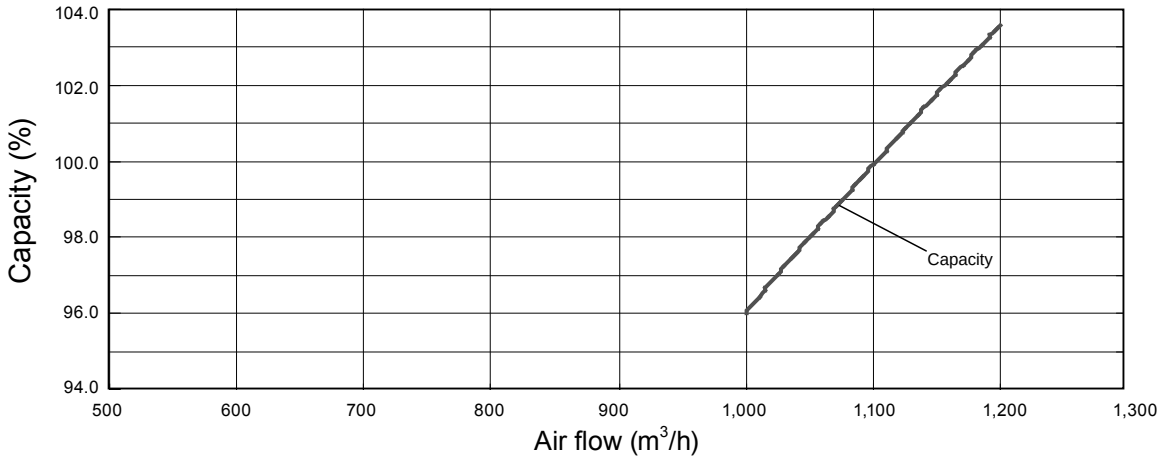
Q-h Characteristic curve



COOLING



HEATING

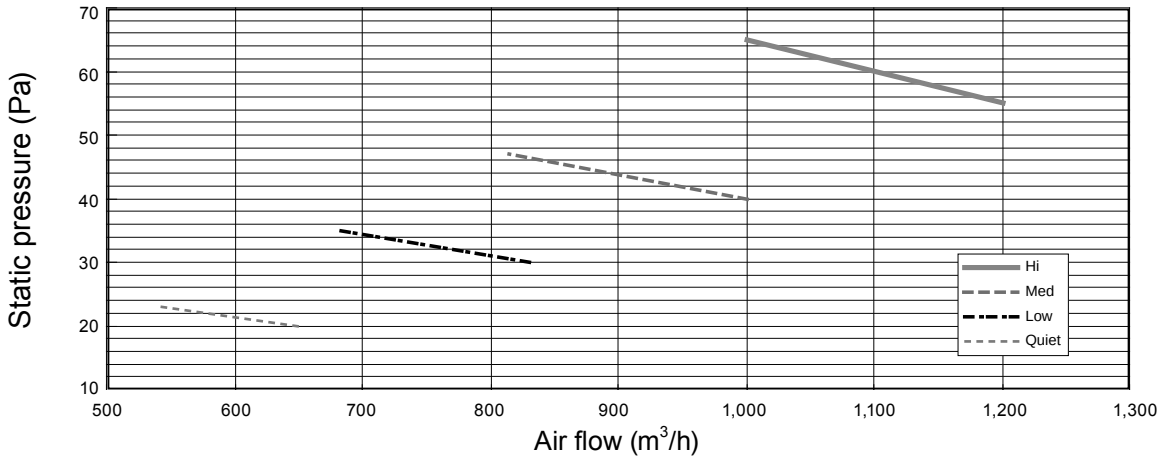


INDOOR UNITS (SIMULTANEOUS MULTI)

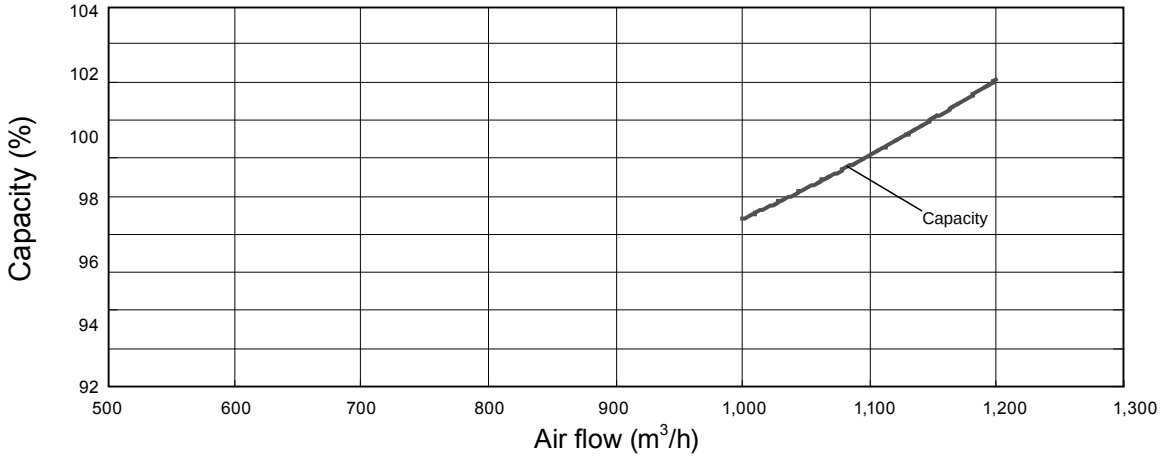
■ MODEL: AR∗G24LM (STATIC PRESSURE MODE 1)

			Static pressure (Pa)							
			20	23	30	35	40	47	55	65
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1200	1000
		l/s	-	-	-	-	-	-	333	278
		CFM	-	-	-	-	-	-	706	589
	Med	m^3/h	-	-	-	-	1000	815	-	-
		l/s	-	-	-	-	278	226	-	-
		CFM	-	-	-	-	589	480	-	-
	Low	m^3/h	-	-	830	680	-	-	-	-
		l/s	-	-	231	189	-	-	-	-
		CFM	-	-	489	400	-	-	-	-
	Quiet	m^3/h	650	540	-	-	-	-	-	-
		l/s	181	150	-	-	-	-	-	-
		CFM	383	318	-	-	-	-	-	-

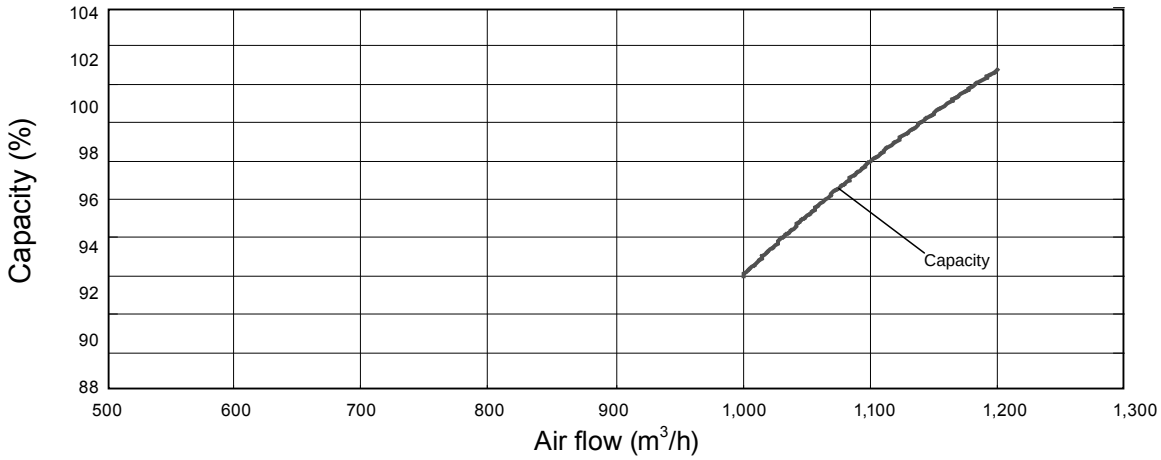
Q-h Characteristic curve



COOLING



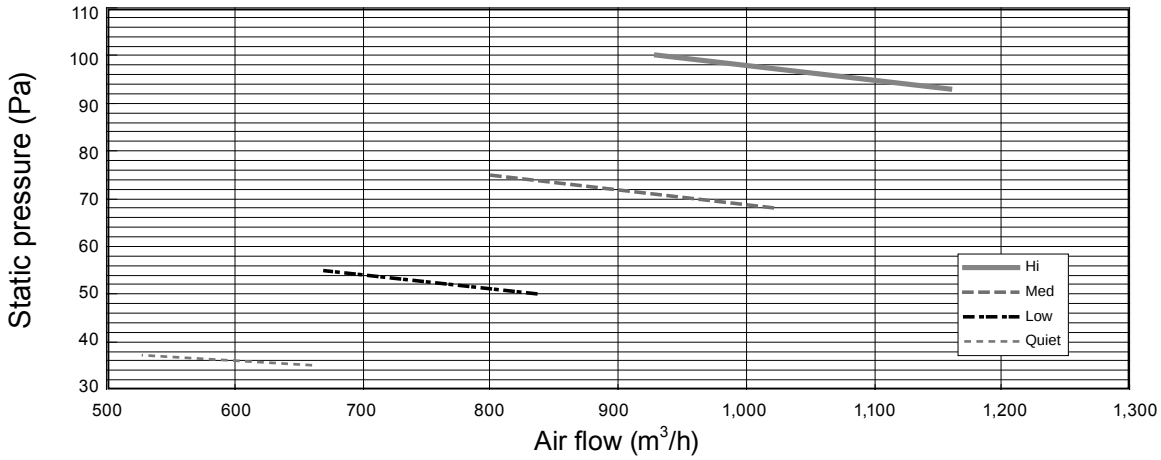
HEATING



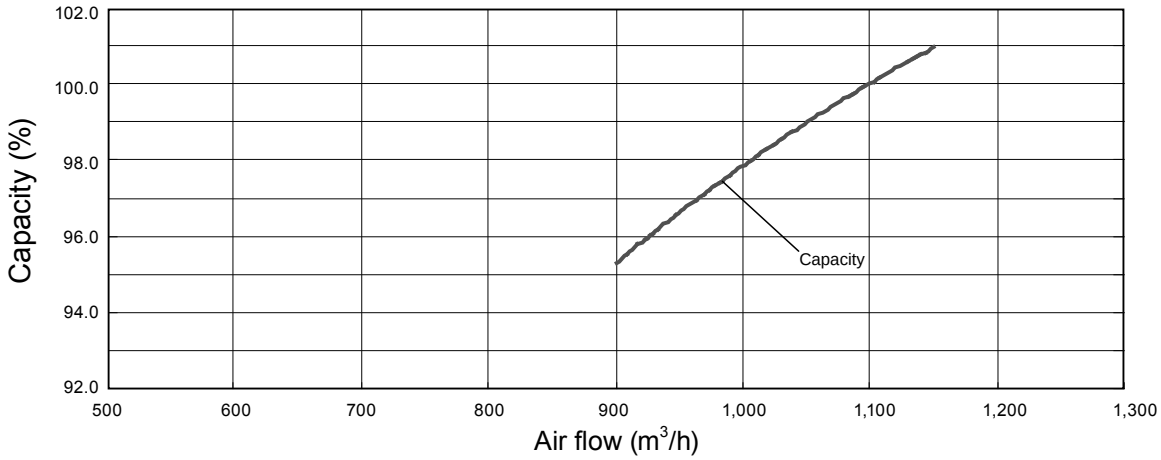
■ MODEL: AR∗G22LM (STATIC PRESSURE MODE 2)

			Static pressure (Pa)							
			35	37	50	55	68	75	93	100
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1160	930
		l/s	-	-	-	-	-	-	322	258
		CFM	-	-	-	-	-	-	683	547
	Med	m^3/h	-	-	-	-	1020	800	-	-
		l/s	-	-	-	-	283	222	-	-
		CFM	-	-	-	-	600	471	-	-
	Low	m^3/h	-	-	835	670	-	-	-	-
		l/s	-	-	232	186	-	-	-	-
		CFM	-	-	491	394	-	-	-	-
	Quiet	m^3/h	660	530	-	-	-	-	-	-
		l/s	183	147	-	-	-	-	-	-
		CFM	388	312	-	-	-	-	-	-

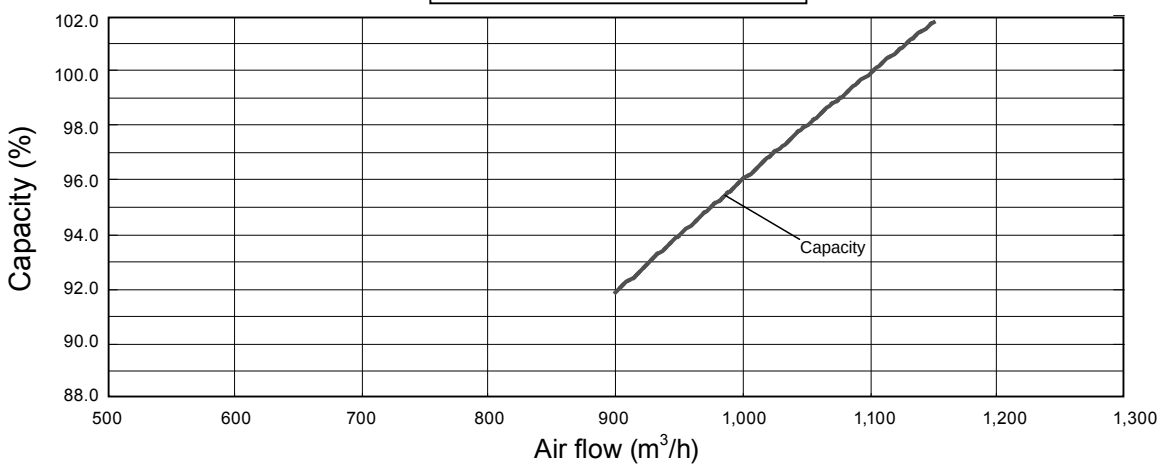
Q-h Characteristic curve



COOLING



HEATING

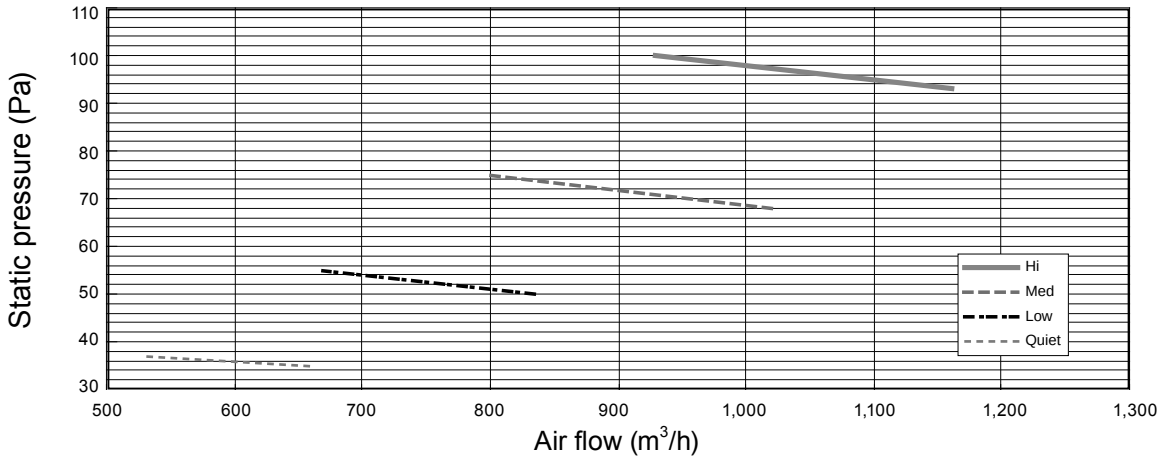


INDOOR UNITS (SIMULTANEOUS MULTI)

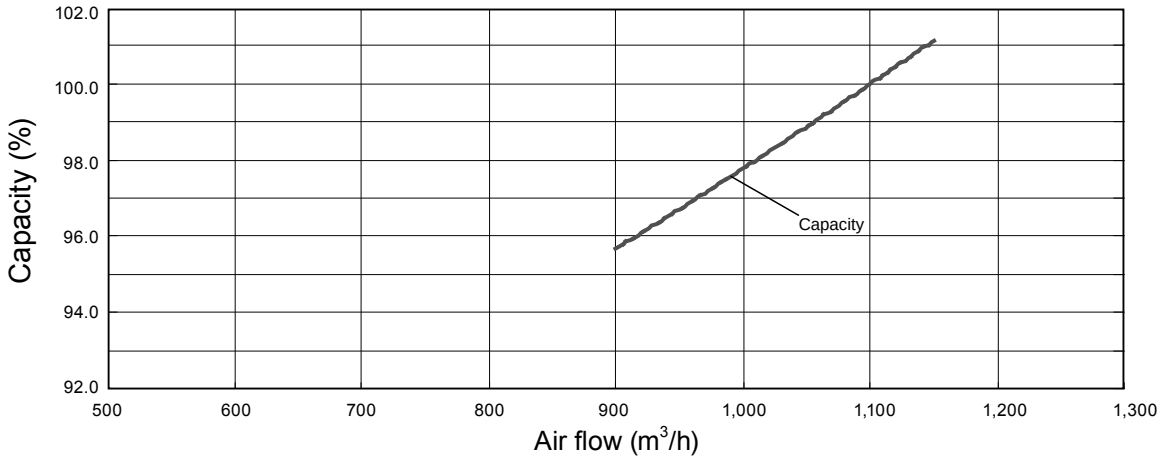
■ MODEL: AR∗G24LM (STATIC PRESSURE MODE 2)

			Static pressure (Pa)							
			35	37	50	55	68	75	93	100
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1160	930
		l/s	-	-	-	-	-	-	322	258
		CFM	-	-	-	-	-	-	683	547
	Med	m^3/h	-	-	-	-	1020	800	-	-
		l/s	-	-	-	-	283	222	-	-
		CFM	-	-	-	-	600	471	-	-
	Low	m^3/h	-	-	835	670	-	-	-	-
		l/s	-	-	232	186	-	-	-	-
		CFM	-	-	491	394	-	-	-	-
	Quiet	m^3/h	660	530	-	-	-	-	-	-
		l/s	183	147	-	-	-	-	-	-
		CFM	388	312	-	-	-	-	-	-

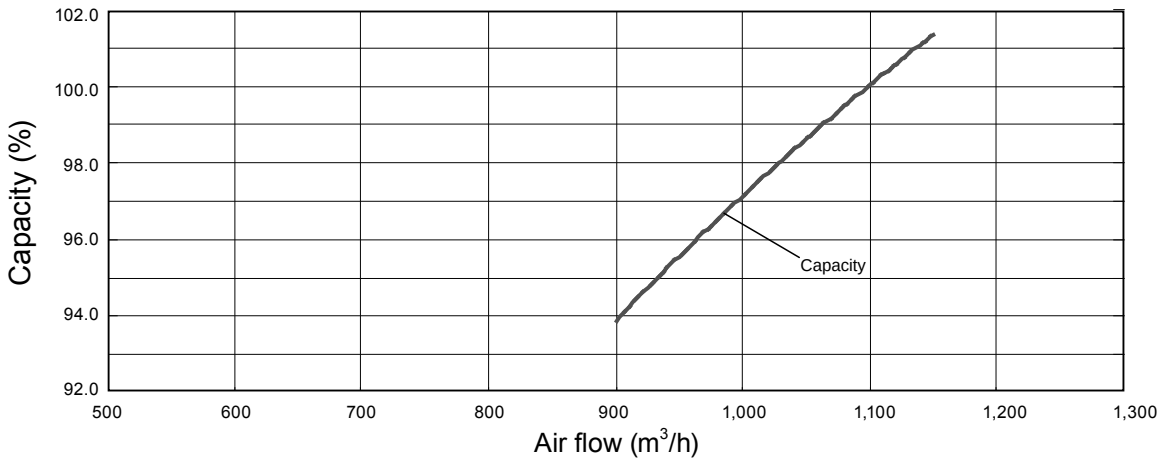
Q-h Characteristic curve



COOLING



HEATING

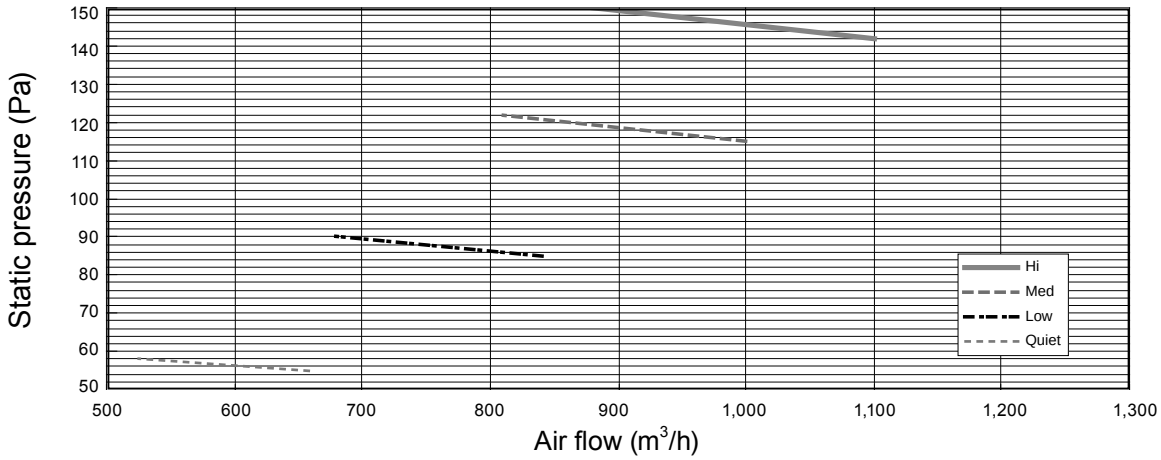


INDOOR UNITS (SIMULTANEOUS MULTI)

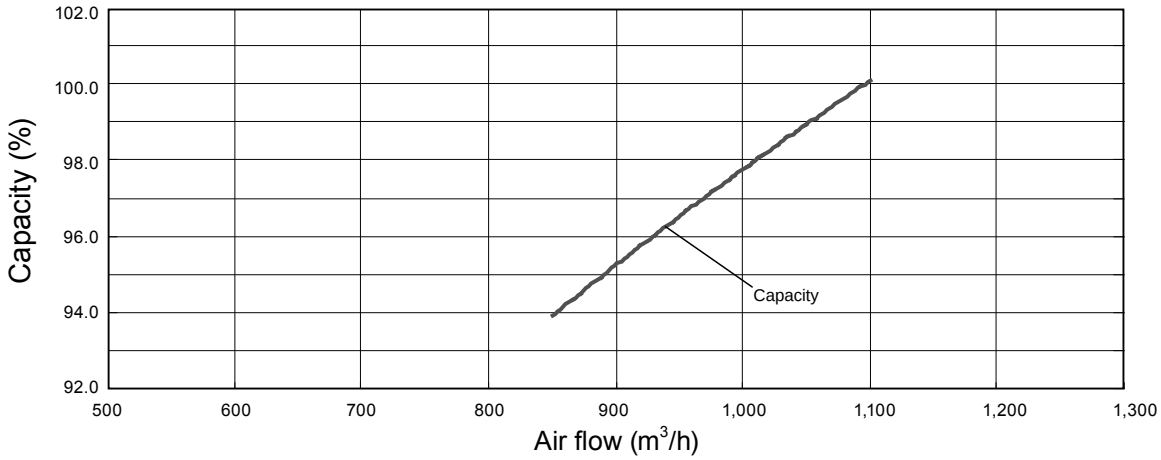
■ MODEL: AR∗G22LM (STATIC PRESSURE MODE 3)

			Static pressure (Pa)							
			55	58	85	90	115	122	142	150
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1100	880
		l/s	-	-	-	-	-	-	306	244
		CFM	-	-	-	-	-	-	647	518
	Med	m^3/h	-	-	-	-	1000	810	-	-
		l/s	-	-	-	-	278	225	-	-
		CFM	-	-	-	-	589	477	-	-
	Low	m^3/h	-	-	840	680	-	-	-	-
		l/s	-	-	233	189	-	-	-	-
		CFM	-	-	494	400	-	-	-	-
	Quiet	m^3/h	660	525	-	-	-	-	-	-
		l/s	183	146	-	-	-	-	-	-
		CFM	388	309	-	-	-	-	-	-

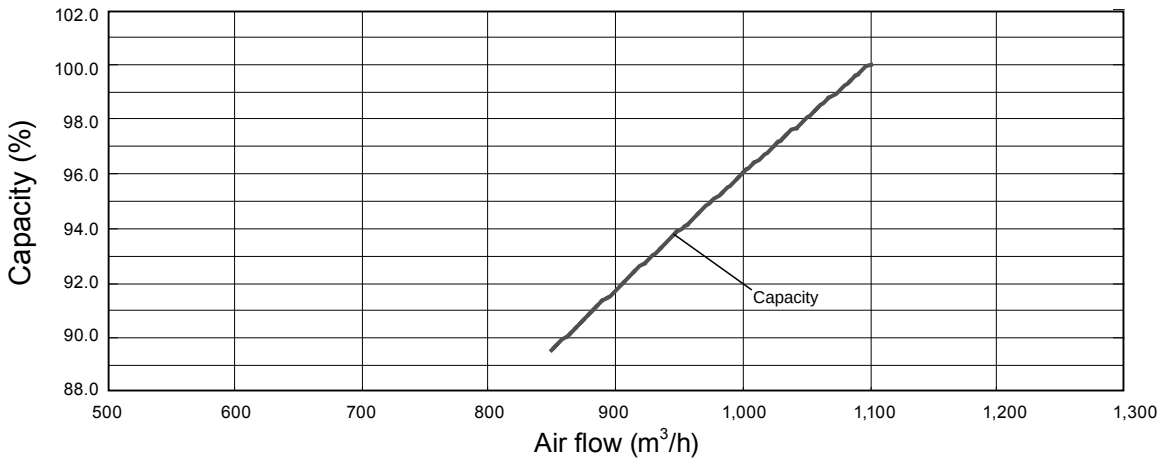
Q-h Characteristic curve



COOLING



HEATING

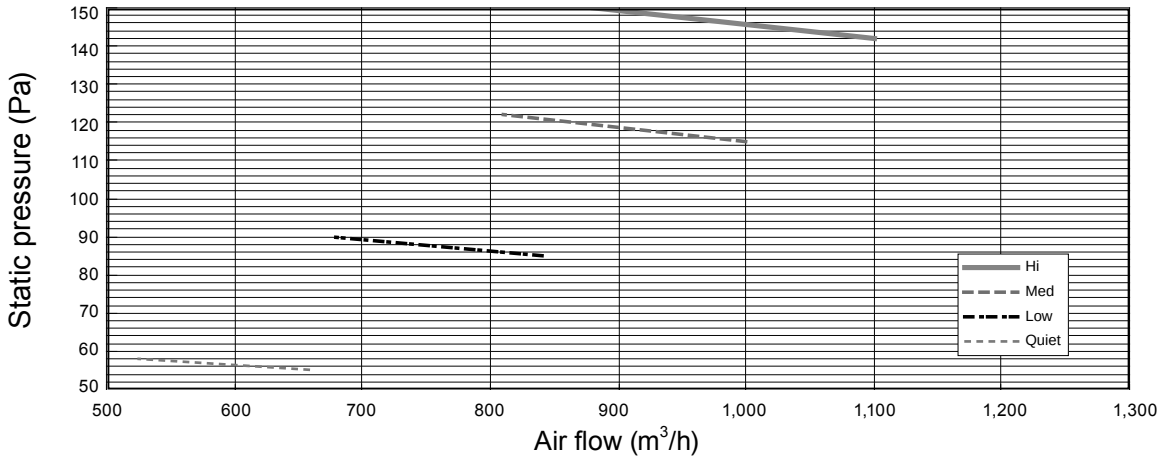


INDOOR UNITS (SIMULTANEOUS MULTI)

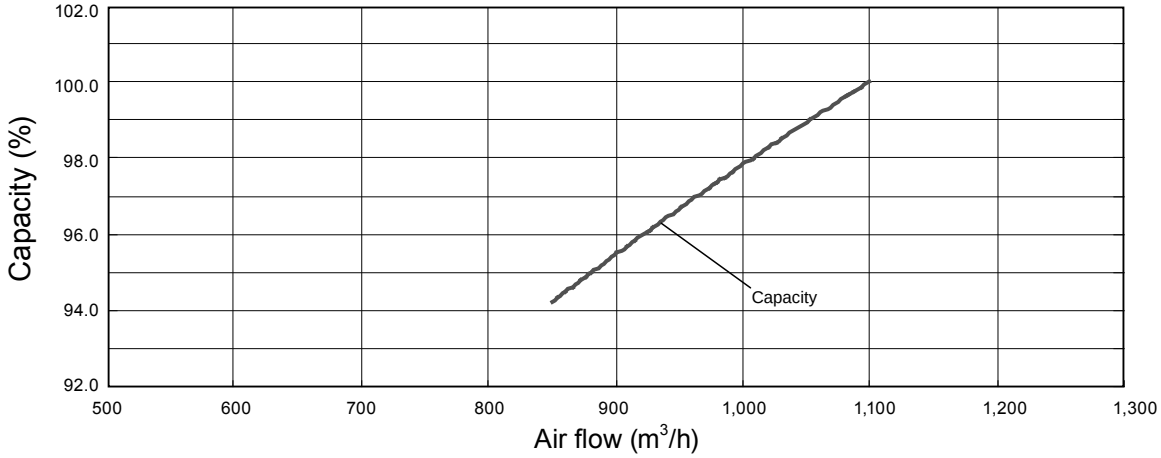
■ MODEL: AR∗G24LM (STATIC PRESSURE MODE 3)

			Static pressure (Pa)							
			55	58	85	90	115	122	142	150
FAN SPEED	Hi	m^3/h	-	-	-	-	-	-	1100	880
		l/s	-	-	-	-	-	-	306	244
		CFM	-	-	-	-	-	-	647	518
	Med	m^3/h	-	-	-	-	1000	810	-	-
		l/s	-	-	-	-	278	225	-	-
		CFM	-	-	-	-	589	477	-	-
	Low	m^3/h	-	-	840	680	-	-	-	-
		l/s	-	-	233	189	-	-	-	-
		CFM	-	-	494	400	-	-	-	-
	Quiet	m^3/h	660	525	-	-	-	-	-	-
		l/s	183	146	-	-	-	-	-	-
		CFM	388	309	-	-	-	-	-	-

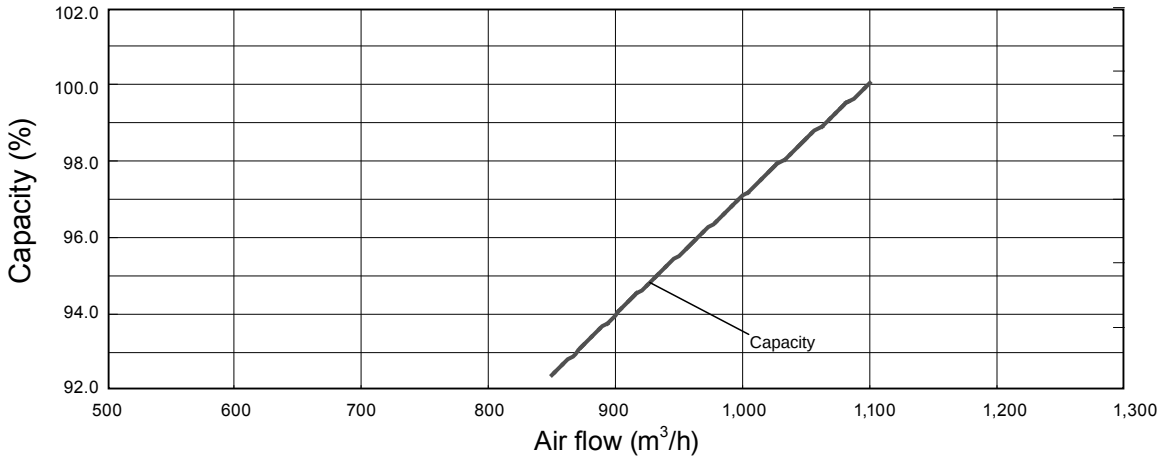
Q-h Characteristic curve



COOLING



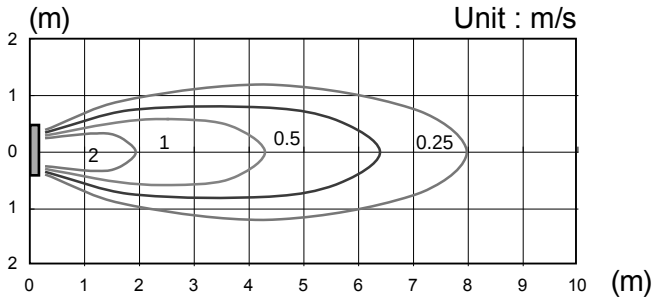
HEATING



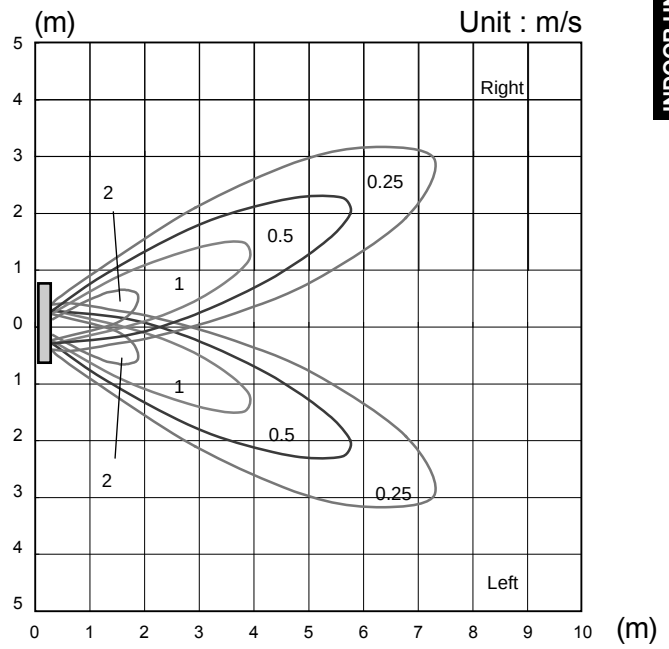
7-4. FLOOR / CEILING TYPE

7-4-1. AIR VELOCITY DISTRIBUTION

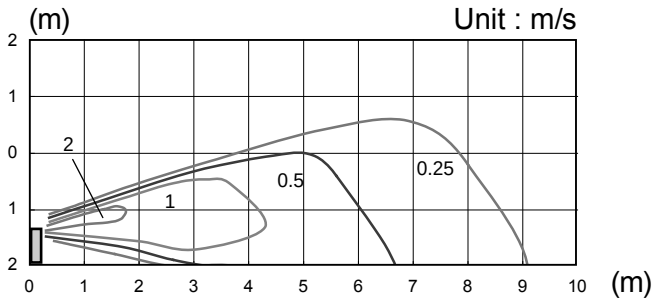
■ MODEL: AB∗G18LV (FLOOR CONSOLE)



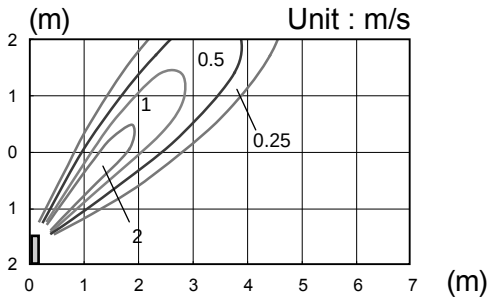
TOP VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER



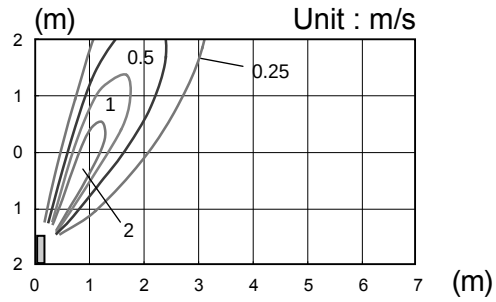
TOP VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : RIGHT & LEFT



SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER



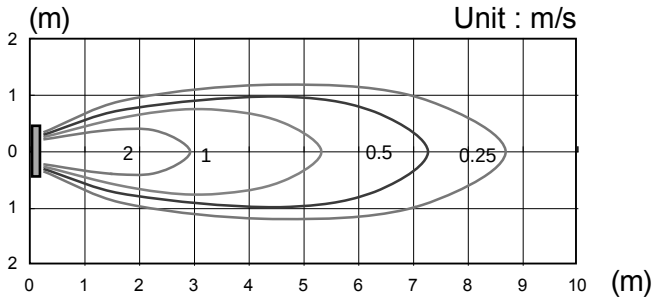
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



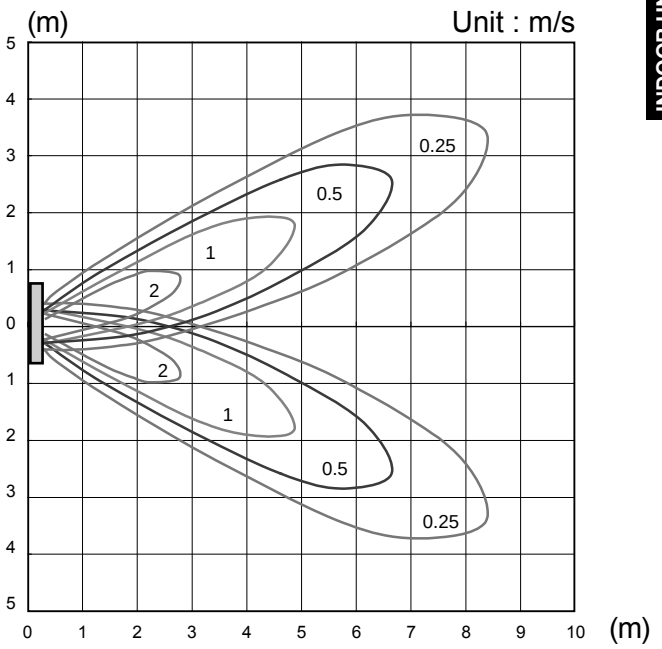
SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER

INDOOR UNITS
(SIMULTANEOUS MULTI)

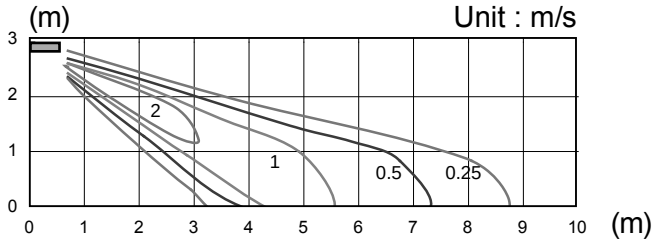
■ MODEL: AB∗G18LV (UNDER CEILING)



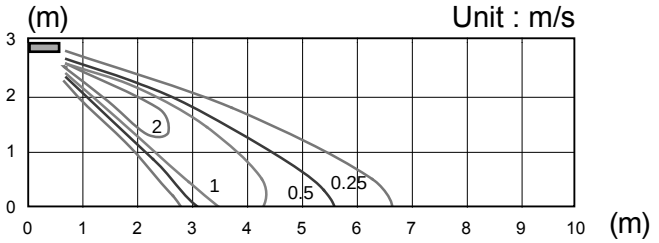
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



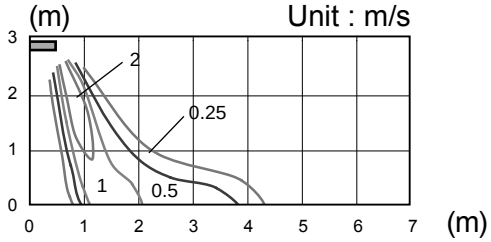
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : RIGHT & LEFT



SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



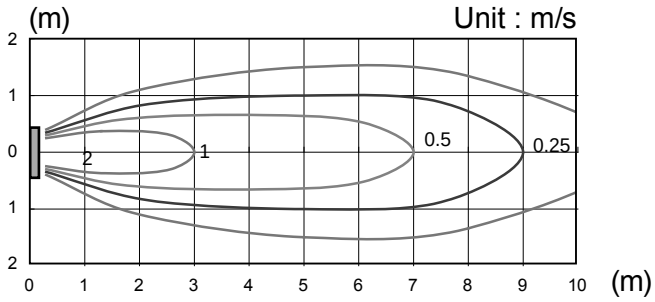
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



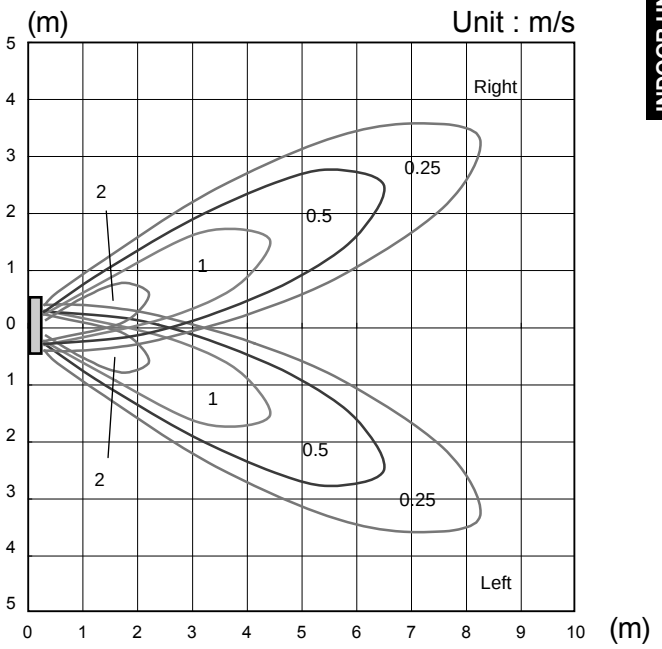
SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER

INDOOR UNITS
(SIMULTANEOUS MULTI)

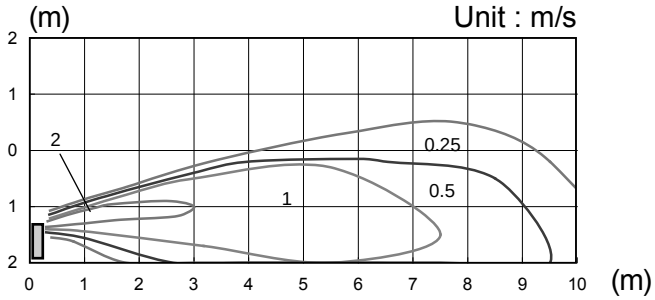
■MODEL: AB∗G22LV (FLOOR CONSOLE)



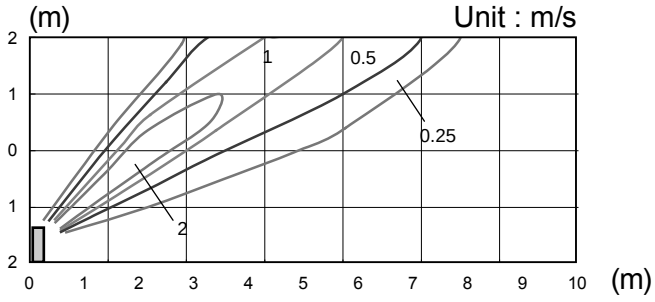
TOP VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER



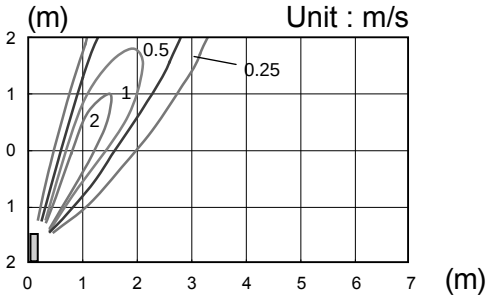
TOP VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : RIGHT & LEFT



SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER



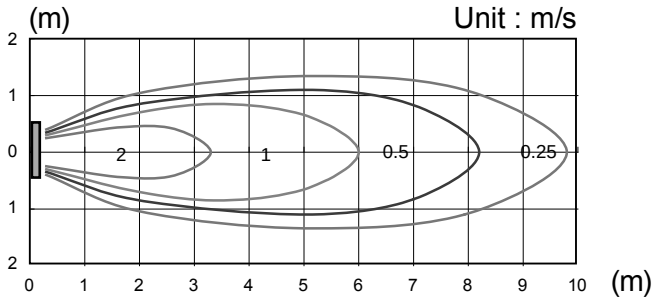
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



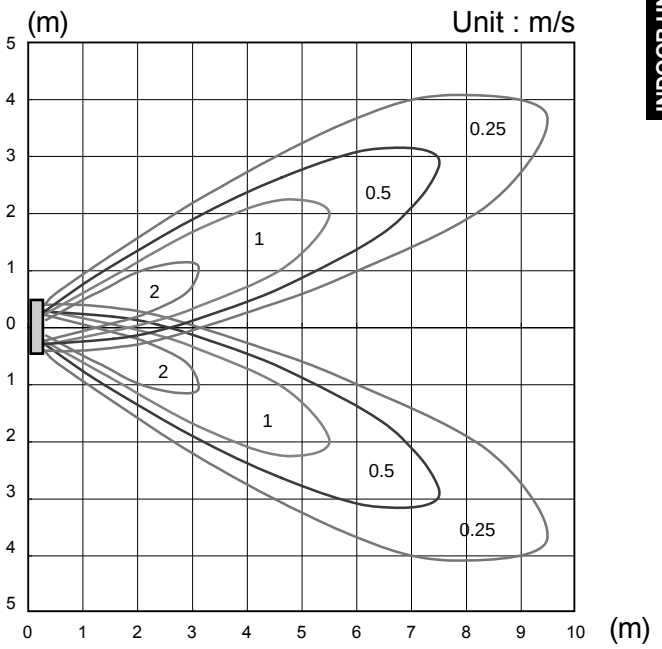
SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER

INDOOR UNITS
(SIMULTANEOUS MULTI)

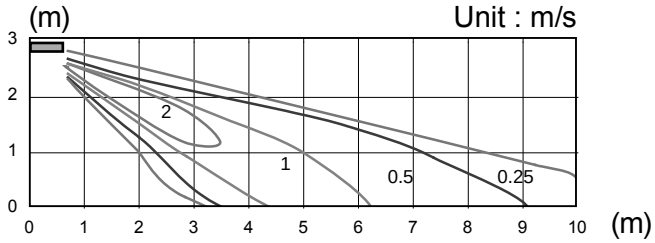
■MODEL: AB∗G22LV (UNDER CEILING)



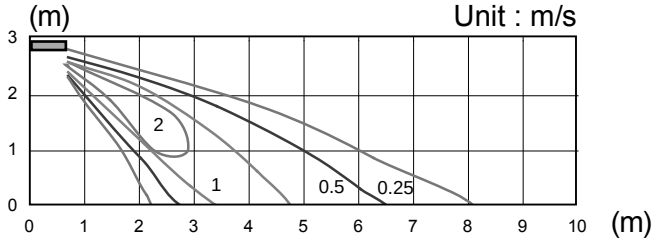
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



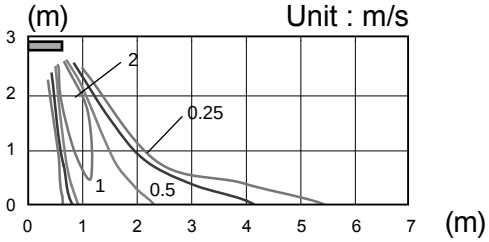
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : RIGHT & LEFT



SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



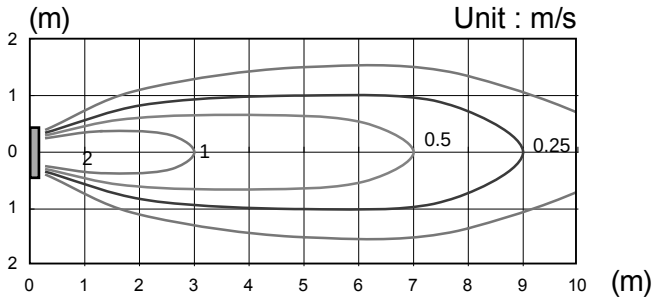
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



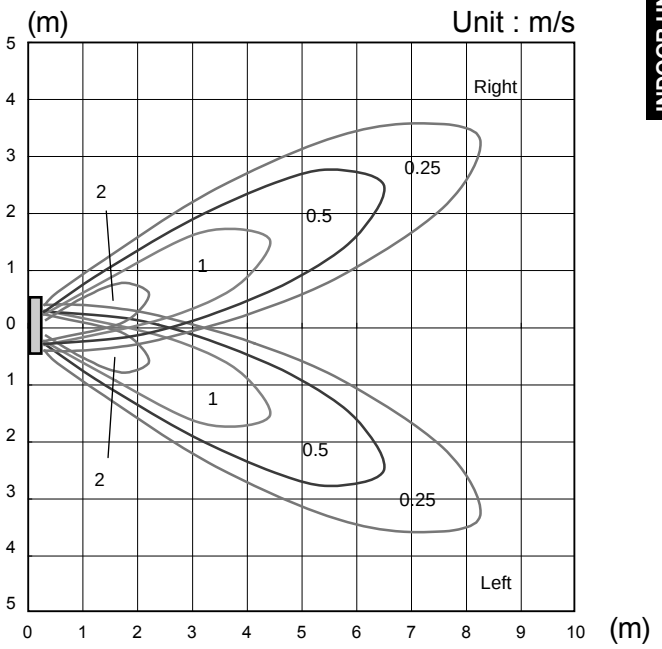
SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER

INDOOR UNITS
(SIMULTANEOUS MULTI)

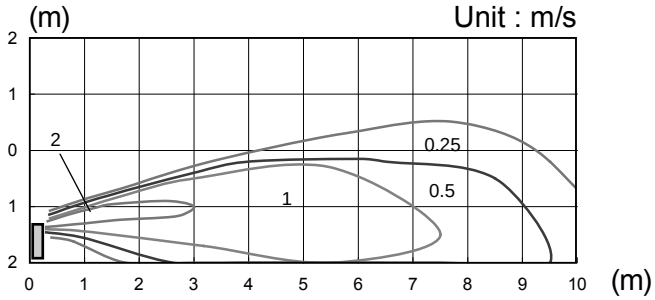
■MODEL: AB∗G24LV (FLOOR CONSOLE)



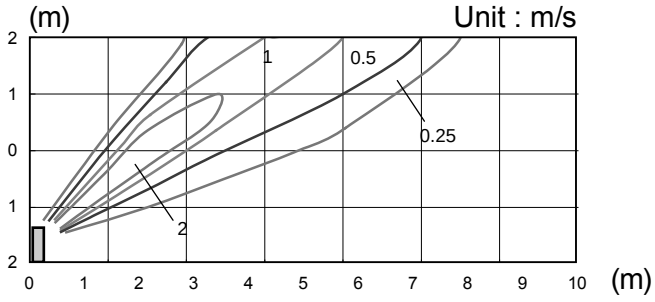
TOP VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER



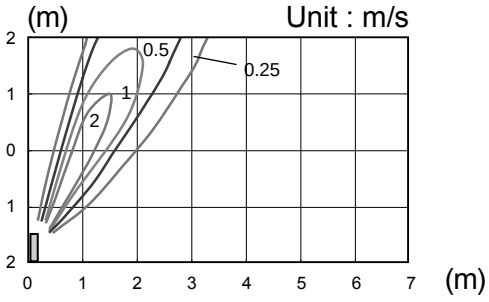
TOP VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : RIGHT & LEFT



SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER



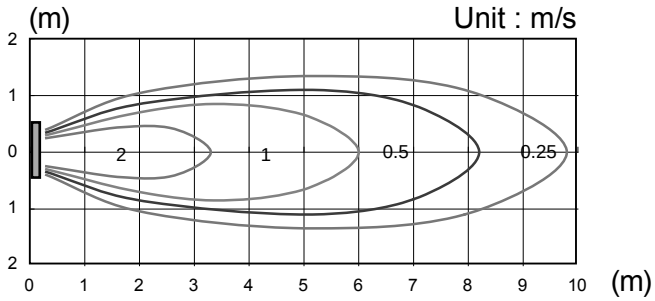
SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



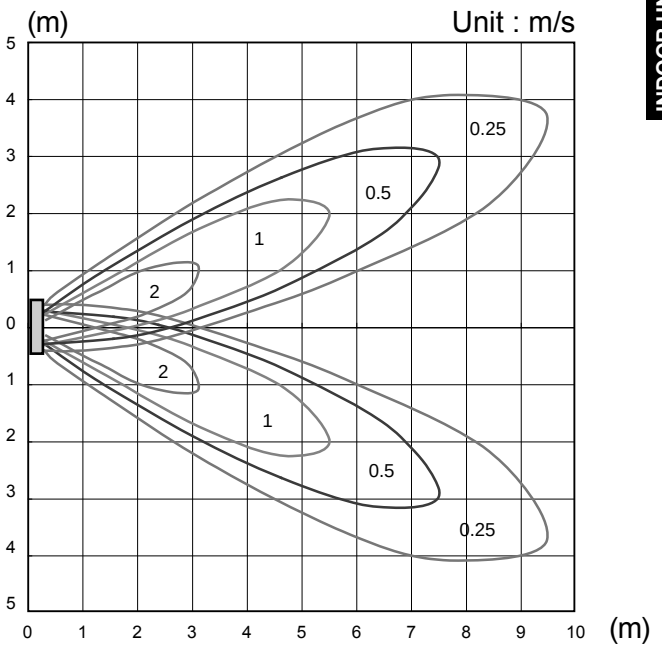
SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER

INDOOR UNITS
(SIMULTANEOUS MULTI)

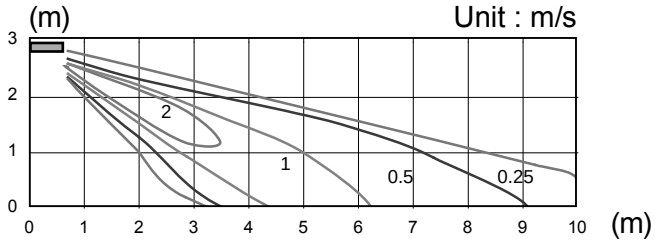
■MODEL: AB∗G24LV (UNDER CEILING)



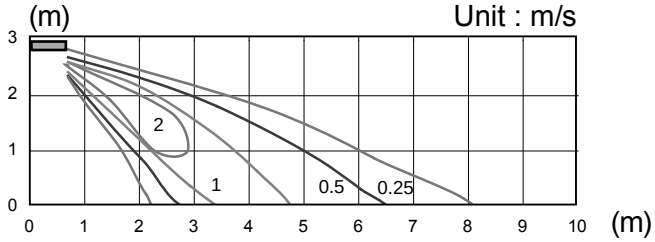
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



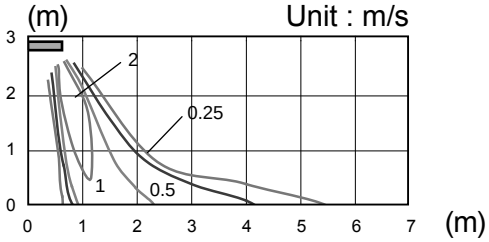
TOP VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : RIGHT & LEFT



SIDE VIEW
VERTICAL FLAP : UPWARD
HORIZONTAL FLAP : CENTER



SIDE VIEW
VERTICAL FLAP : CENTER
HORIZONTAL FLAP : CENTER



SIDE VIEW
VERTICAL FLAP : DOWNWARD
HORIZONTAL FLAP : CENTER

7-4-2. AIR FLOW

■ MODEL: AB∗G18LV

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1040	m^3/h	780
		l/s	217
		CFM	459
MED	950	m^3/h	700
		l/s	194
		CFM	412
LOW	800	m^3/h	560
		l/s	156
		CFM	330
QUIET	740	m^3/h	500
		l/s	139
		CFM	294

● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1040	m^3/h	780
		l/s	217
		CFM	459
MED	950	m^3/h	700
		l/s	194
		CFM	412
LOW	800	m^3/h	560
		l/s	156
		CFM	330
QUIET	740	m^3/h	500
		l/s	139
		CFM	294

INDOOR UNITS (SIMULTANEOUS MULTI)

INDOOR UNITS (SIMULTANEOUS MULTI)

■MODEL: AB∗G22LV

●Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1330	m^3/h	980
		l/s	272
		CFM	577
MED	1150	m^3/h	820
		l/s	228
		CFM	483
LOW	1000	m^3/h	680
		l/s	189
		CFM	400
QUIET	780	m^3/h	540
		l/s	150
		CFM	318

●Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1300	m^3/h	980
		l/s	272
		CFM	577
MED	1150	m^3/h	820
		l/s	228
		CFM	483
LOW	1000	m^3/h	680
		l/s	189
		CFM	400
QUIET	780	m^3/h	540
		l/s	150
		CFM	318

INDOOR UNITS (SIMULTANEOUS MULTI)

■MODEL: AB∗G24LV

●Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1330	m^3/h	980
		l/s	272
		CFM	577
MED	1150	m^3/h	820
		l/s	228
		CFM	483
LOW	1000	m^3/h	680
		l/s	189
		CFM	400
QUIET	780	m^3/h	540
		l/s	150
		CFM	318

●Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1300	m^3/h	980
		l/s	272
		CFM	577
MED	1150	m^3/h	820
		l/s	228
		CFM	483
LOW	1000	m^3/h	680
		l/s	189
		CFM	400
QUIET	780	m^3/h	540
		l/s	150
		CFM	318

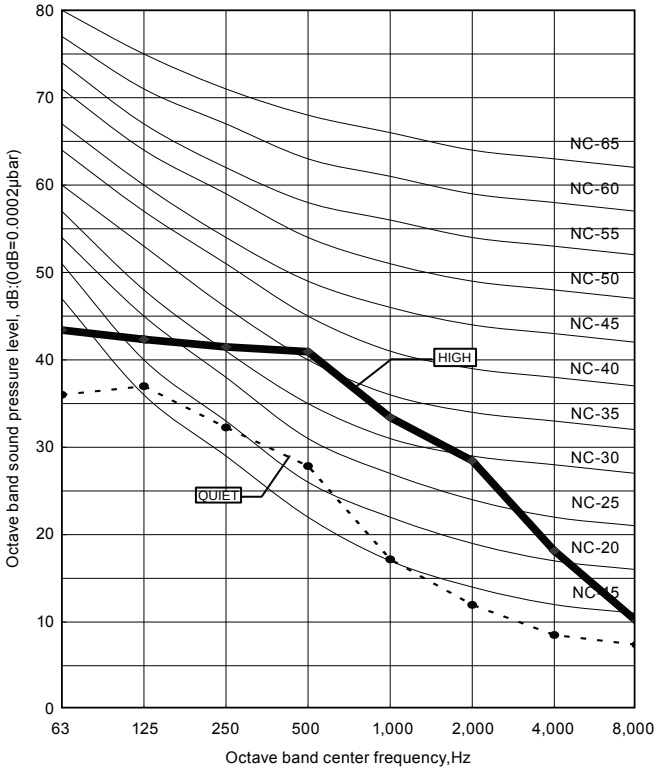
8. OPERATION NOISE

8-1. NOISE LEVEL CURVE

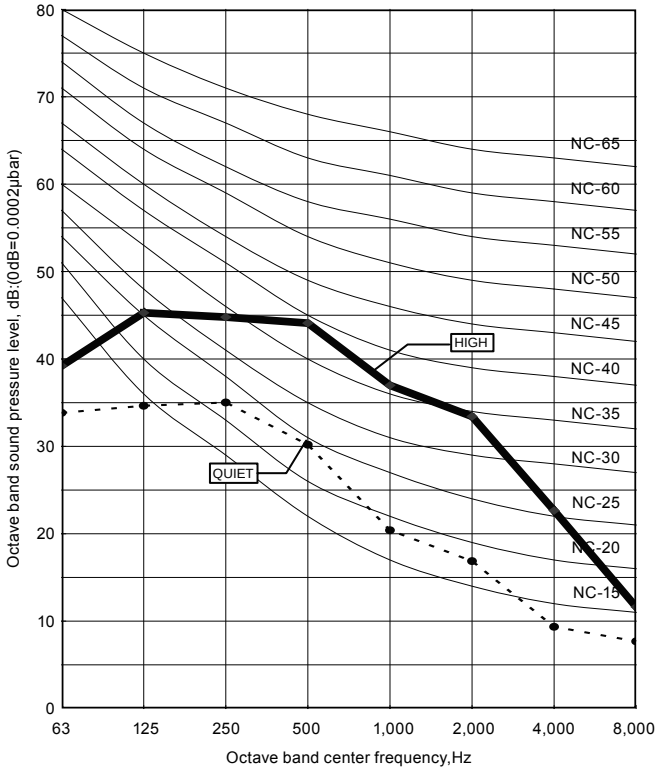
8-1-1. COMPACT CASSETTE TYPE

■ MODEL: AU∗G18LV

● Cooling

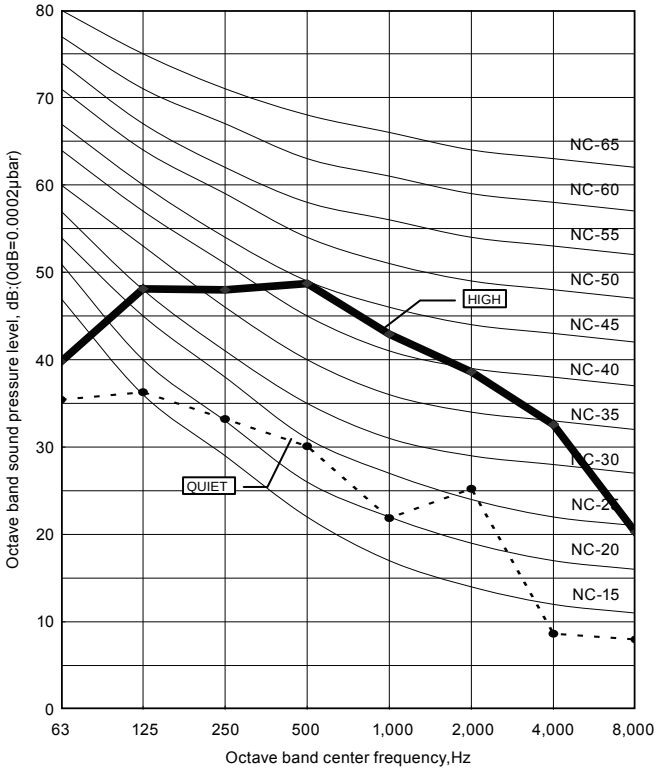


● Heating

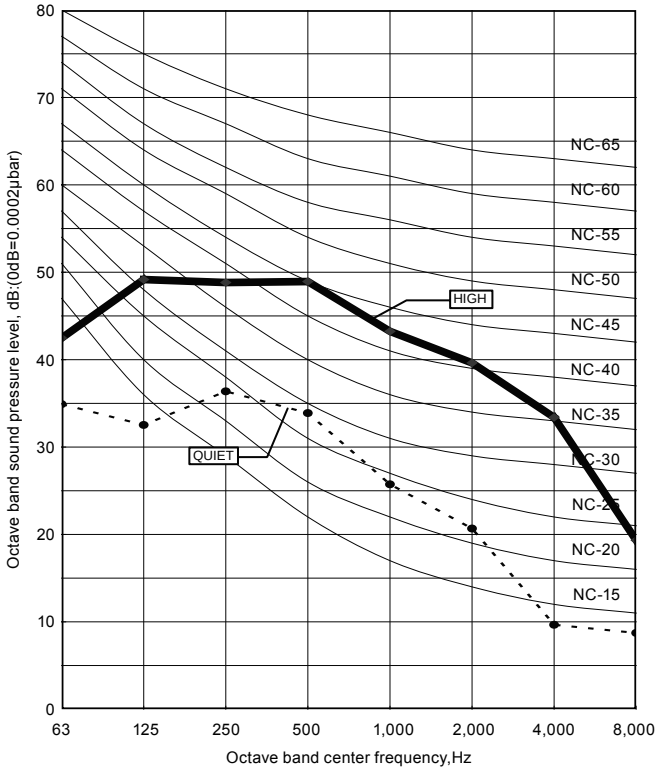


■ MODEL: AU∗G22LV

● Cooling

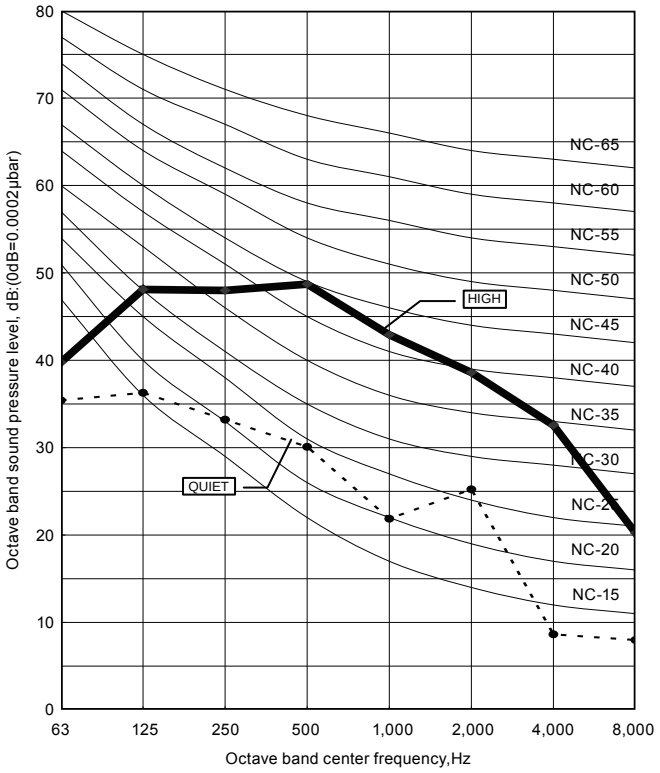


● Heating

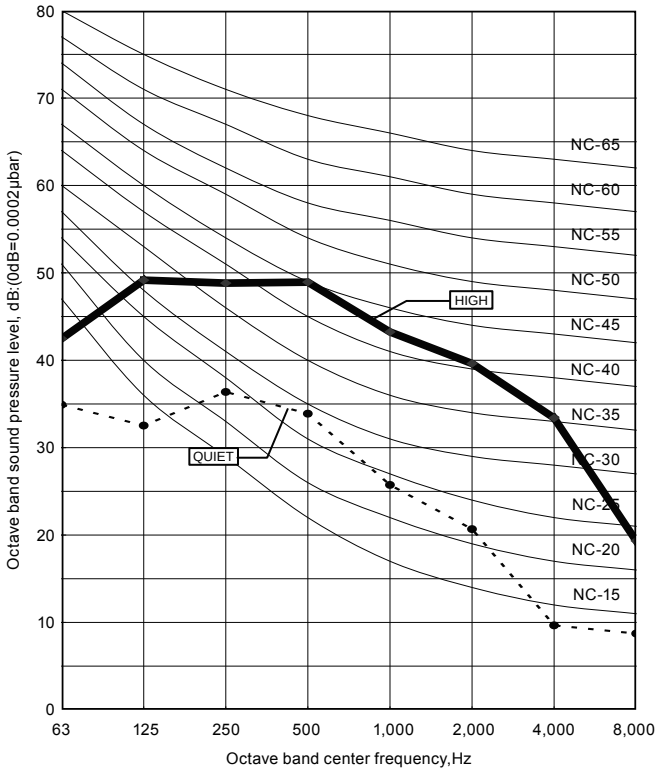


■MODEL: AU∗G24LV

●Cooling



●Heating

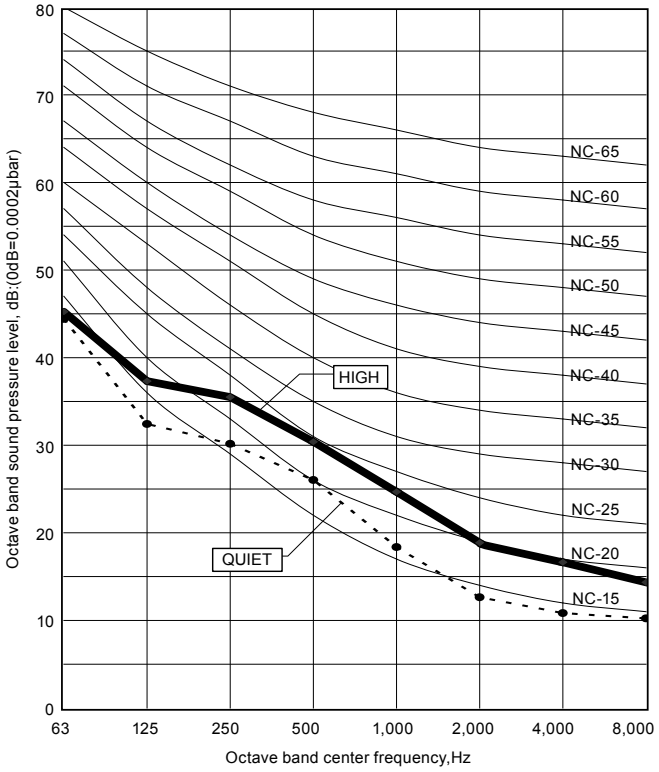


INDOOR UNITS
(SIMULTANEOUS MULTI)

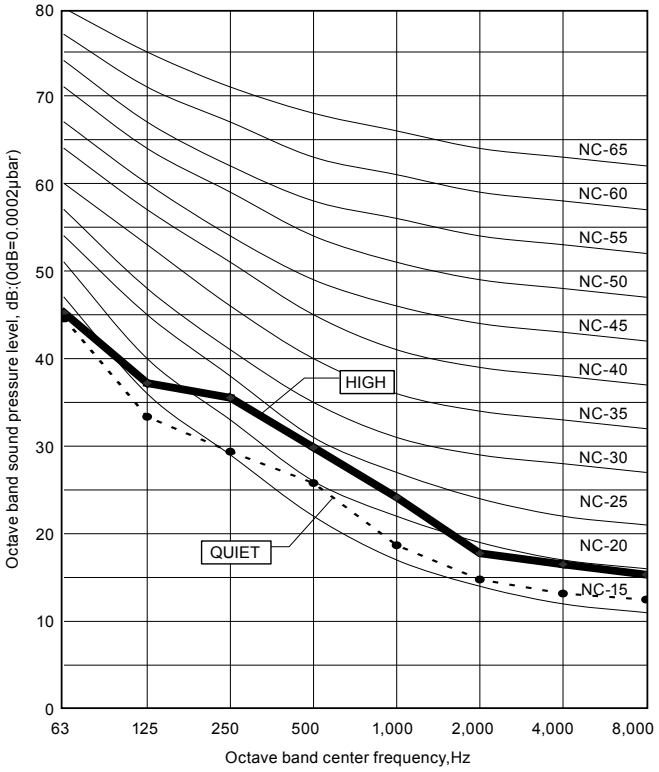
8-1-2. SLIM DUCT TYPE

■ MODEL: AR∗G18LL

● Cooling



● Heating

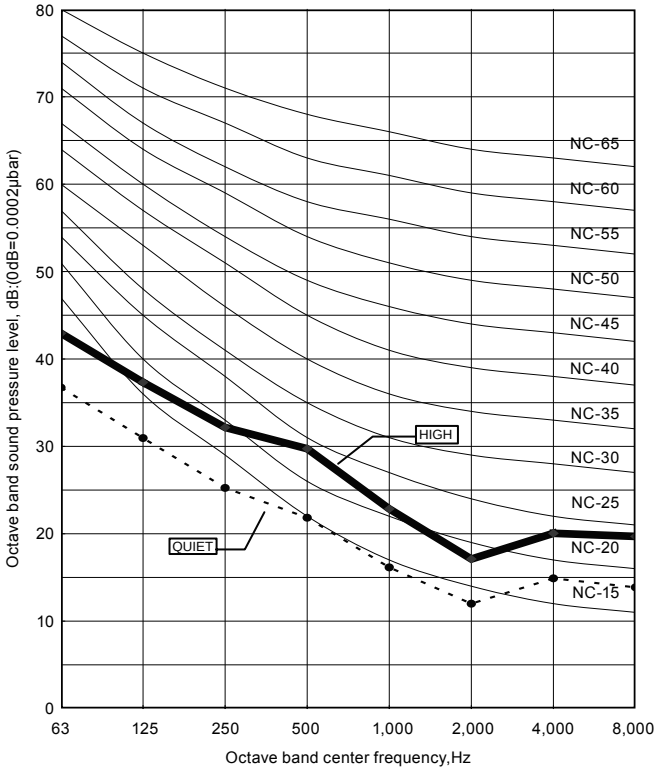


INDOOR UNITS
(SIMULTANEOUS MULTI)

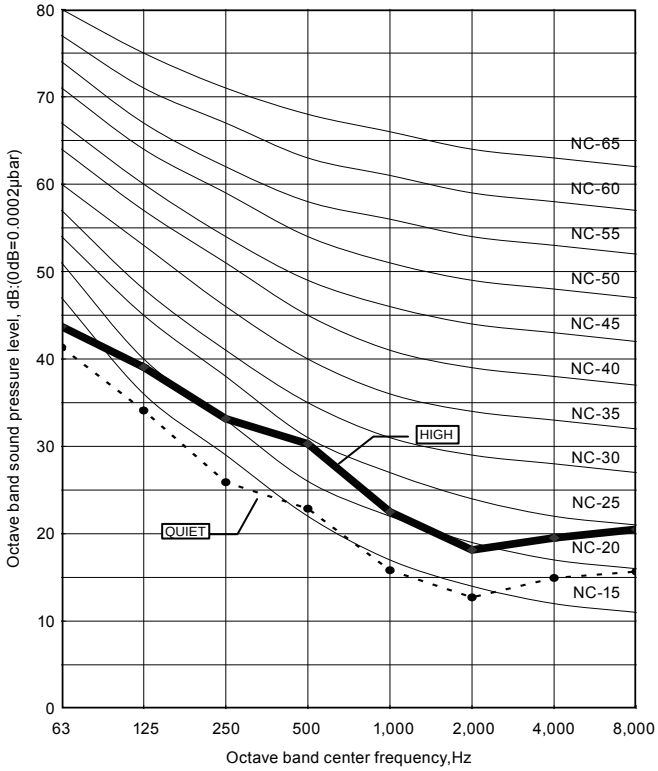
8-1-3. DUCT TYPE

■ MODEL: AR∗G22LM

● Cooling

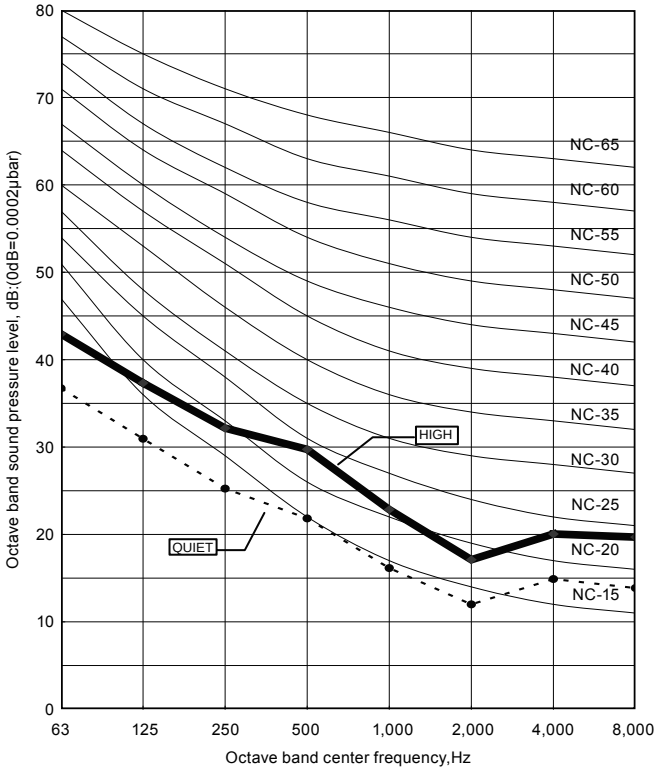


● Heating

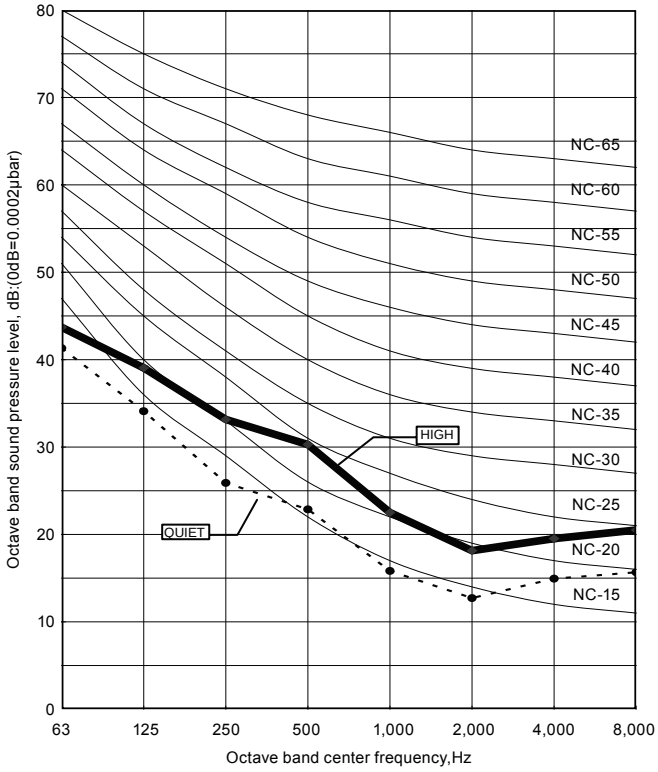


■ MODEL: AR∗G24LM

● Cooling



● Heating

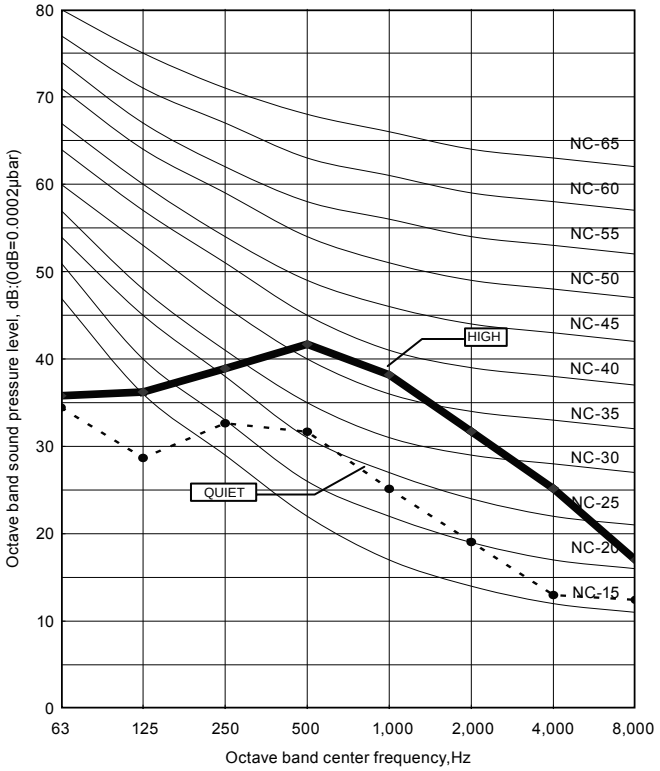


INDOOR UNITS (SIMULTANEOUS MULTI)

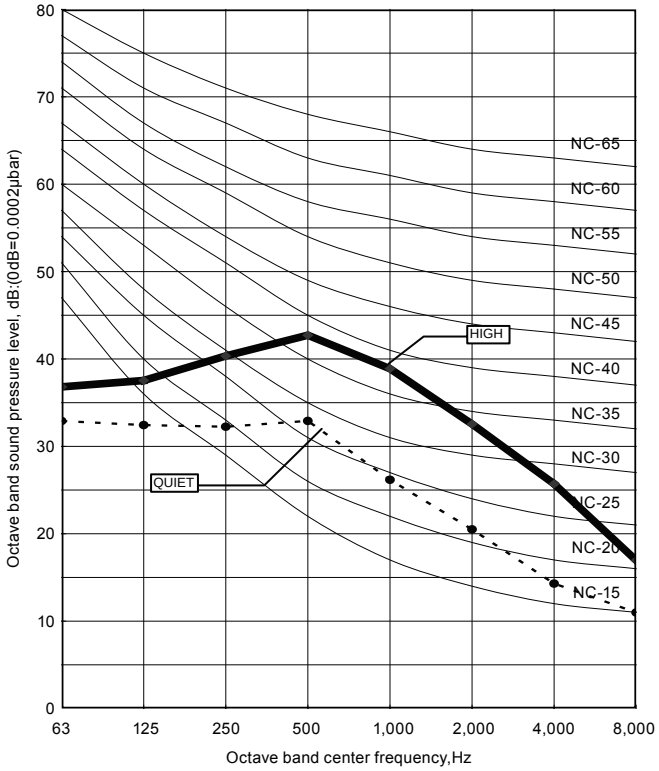
8-1-4. FLOOR / CEILING TYPE

■ MODEL: AB∗G18LV

● Cooling

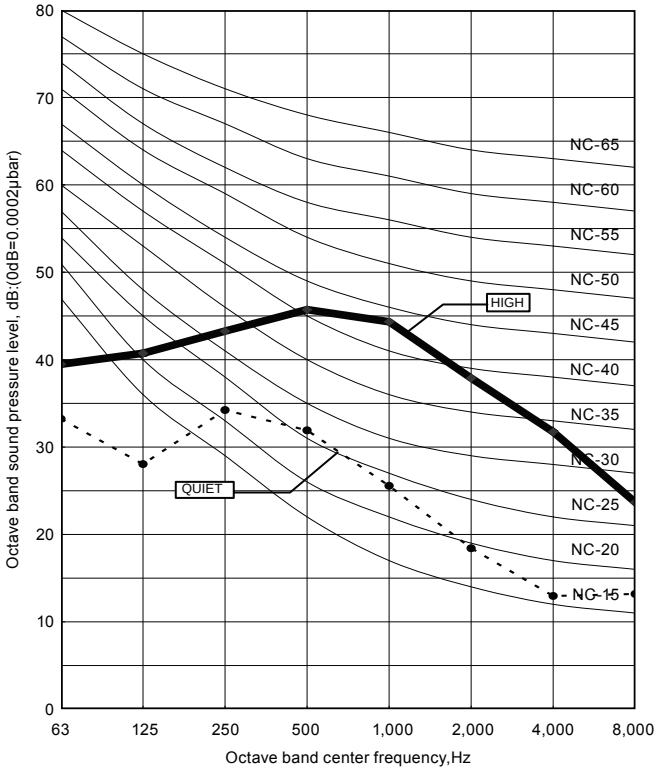


● Heating

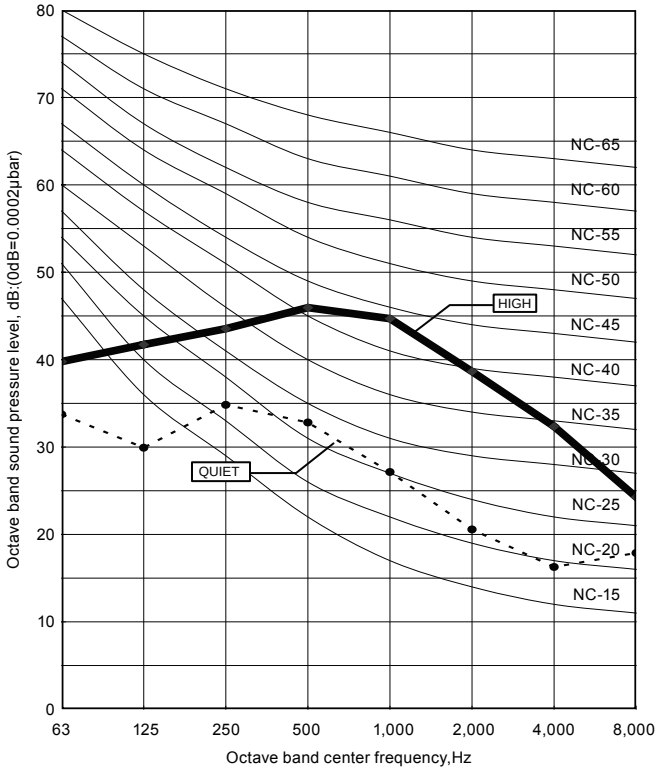


■ MODEL: AB∗G22LV

● Cooling



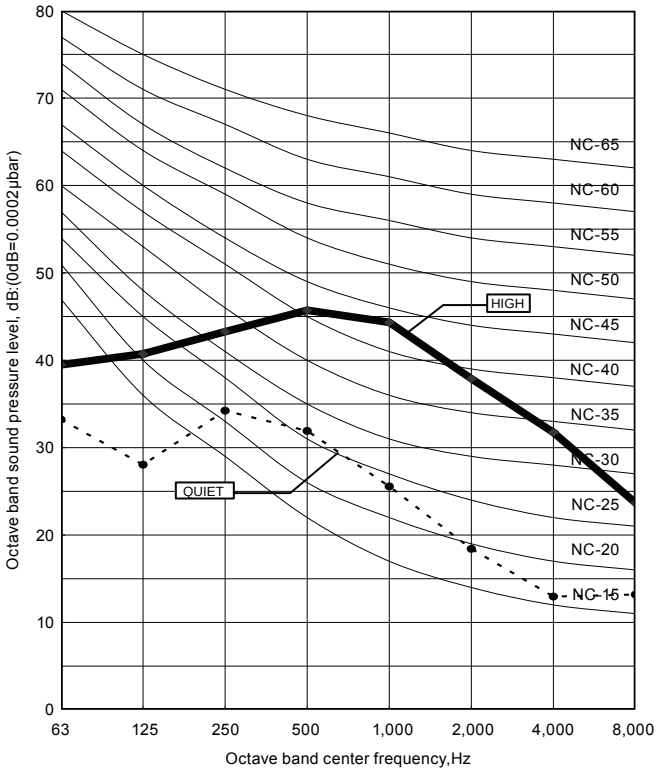
● Heating



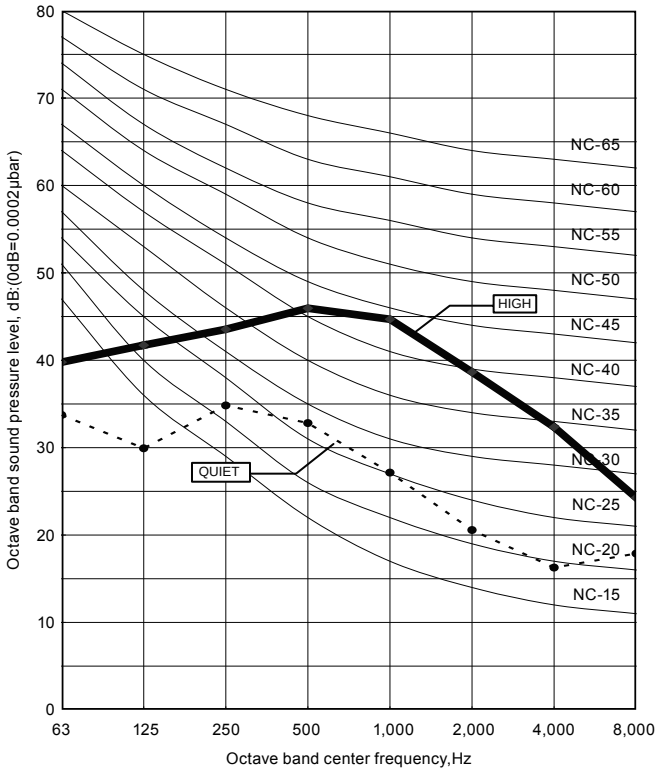
INDOOR UNITS (SIMULTANEOUS MULTI)

■MODEL: AB∗G24LV

●Cooling



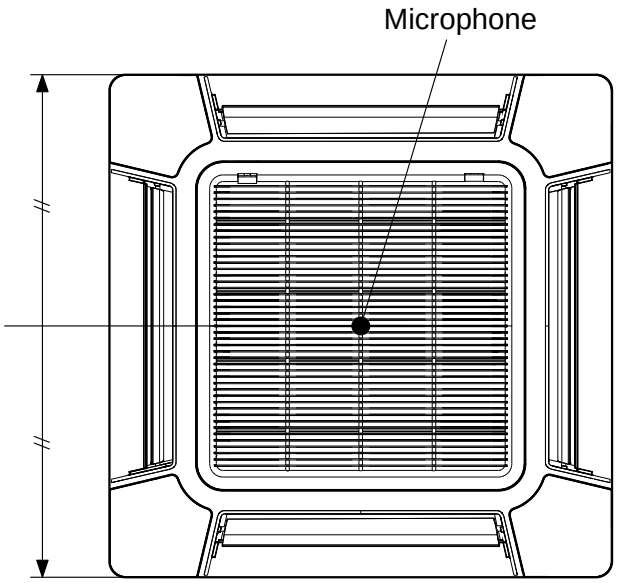
●Heating

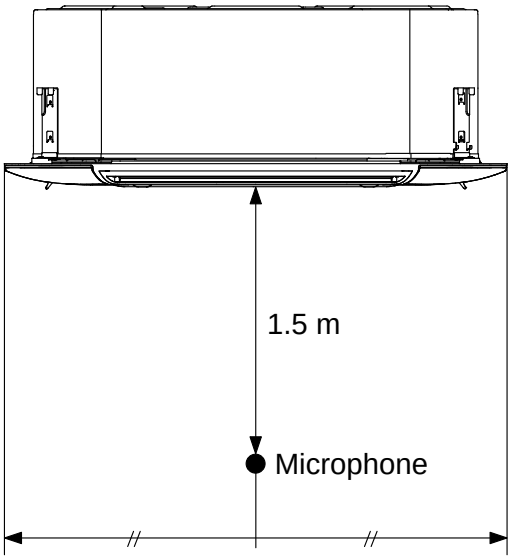


INDOOR UNITS
(SIMULTANEOUS MULTI)

8-2. SOUND LEVEL CHECK POINT

■ COMPACT CASSETTE TYPE

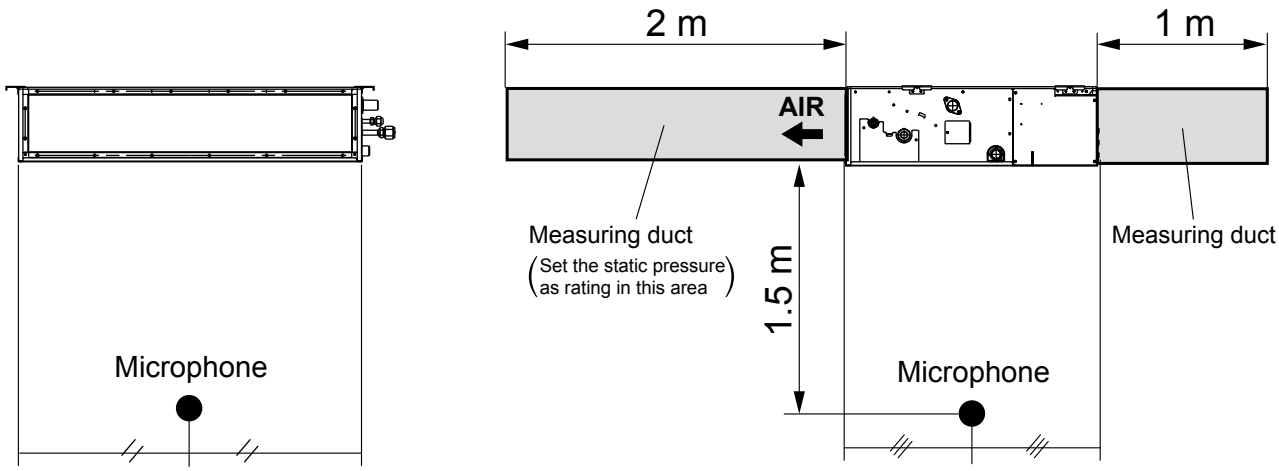




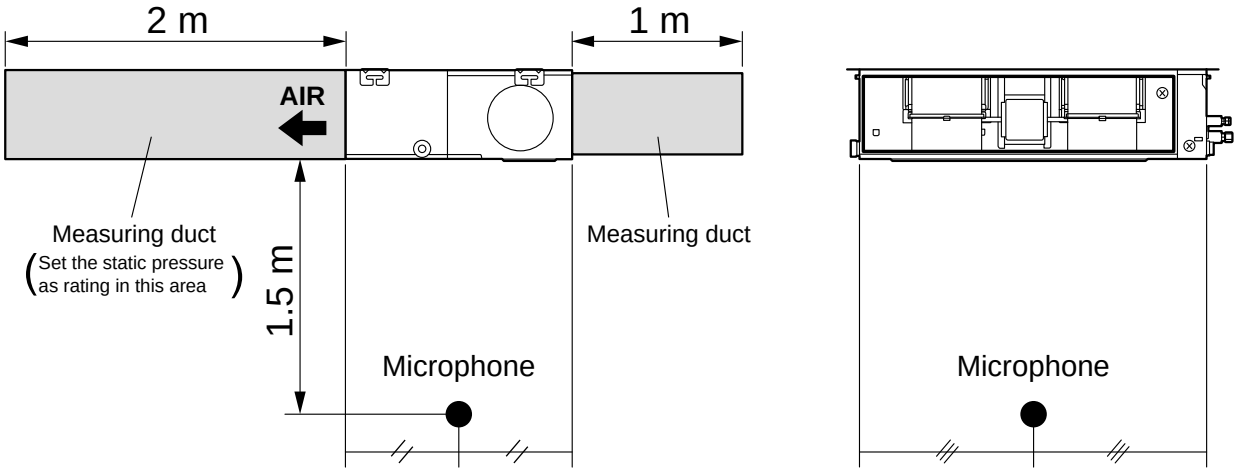
INDOOR UNITS
(SIMULTANEOUS MULTI)

INDOOR UNITS
(SIMULTANEOUS MULTI)

■ SLIM DUCT TYPE



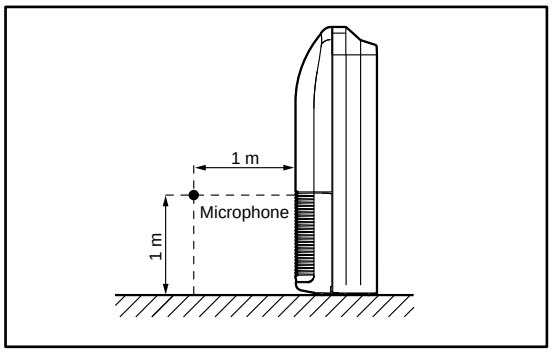
■ DUCT TYPE

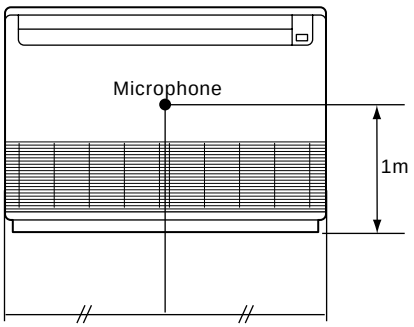


INDOOR UNITS
(SIMULTANEOUS MULTI)

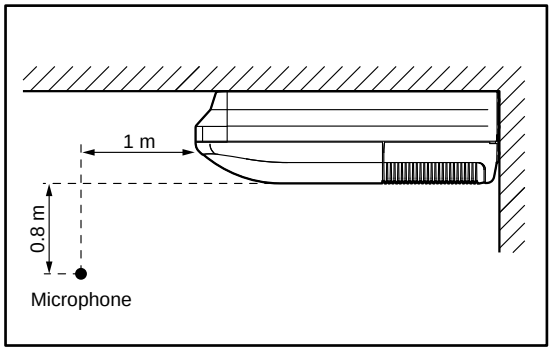
■ FLOOR / CEILING TYPE

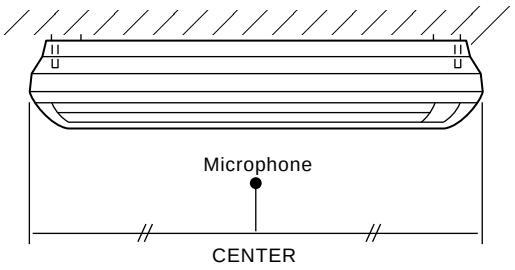
● Floor console





● Under ceiling





9. ELECTRIC CHARACTERISTICS

Indoor unit		Power supply		Max. operating current (A)	Wiring specification (Total*)	
Type	Model name	Voltage (V)	Frequency (Hz)		Connection cable (mm^2)	Limited wiring length (m)
COMPACT CASSETTE	AU∗G18LV	230 ~	50	0.2	1.5 (Min.)	75
	AU∗G22LV			0.3		
	AU∗G24LV			0.3		
SLIM DUCT	AR∗G18LL	230 ~	50	0.5	1.5 (Min.)	75
DUCT	AR∗G22LM	230 ~	50	0.7	1.5 (Min.)	75
	AR∗G24LM					
FLOOR / CEILING	AB∗G18LV	230 ~	50	0.5	1.5 (Min.)	75
	AB∗G22LV			0.7		
	AB∗G24LV			0.7		

Note : Wiring specification

1. Selected sample
   (Selected based on Japan Electrotechnical Standard and Codes Committee E0005)
2. Limited wiring length : Limit voltage drop to less than 2%. Increase cable gauge if voltage drop is 2% or more.
3. If the transmission wire is longer than 50m, use the bigger conductor size.

*: Total length of all wirings that interconnect between indoor units and between indoor unit and outdoor unit.

INDOOR UNITS (SIMULTANEOUS MULTI)

10. SAFETY DEVICES

Indoor unit		Circuit protection	Fan motor protection
Type	Model name	Current fuse (PCB)	Thermal protection program
COMPACT CASSETTE	AU∗G18LV	250V 3.15A	OFF: 138 ± 15 °C ON: 105 ± 20 °C
	AU∗G22LV		
	AU∗G24LV		
SLIM DUCT	AR∗G18LL	250V 5A	OFF: 135 ± 15 °C ON: 115 ± 15 °C
DUCT	AR∗G22LM	250V 3.15A	OFF: 135 ± 15 °C ON: 115 ± 15 °C
	AR∗G24LM		
FLOOR / CEILING	AB∗G18LV	250V 3.15A	OFF: 135 ± 15 °C ON: 115 ± 15 °C
	AB∗G22LV		
	AB∗G24LV		

INDOOR UNITS (SIMULTANEOUS MULTI)

Refrigerant R410A
INVERTER

AIR CONDITIONER

3 phase type

Single / Simultaneous multi system

4. OUTDOOR UNIT

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1. SPECIFICATIONS

Type				INVERTER HEATPUMP		
Model name				AO∗G36LATT	AO∗G45LATT	AO∗G54LATT
Power source				3N ~ 400V 50Hz		
Available voltage range				3N ~ 342V - 457V 50Hz		
Starting current			A	4.4	6.1	6.9
Fan	Airflow rate	Cooling	m^3/h	6200	6750	6900
		Heating		6200	6200	6900
	Type × Q'ty			Propeller × 2		
	Motor output		W	104		
Sound pressure level		Cooling	dB (A)	51	54	55
		Heating		53	54	56
Sound power level		Cooling	dB (A)	67	-	-
		Heating		69	-	-
Heat exchanger type		Dimensions (H × W × D)	mm	1260 × 900 × 36.4		
		Fin pitch		1.30		
		Rows x Stages		2 × 60		
		Pipe type		Copper		
		Fin: Type (Material)		Corrugate (Aluminium)		
		Fin: Surface treatment		Corrosion resistance (Blue fin)		
Compressor	Type × Q'ty			Twin Rotary × 1		
	Motor output		W	3750		
Refrigerant		Type (Global Warming Potential)		R410A (1975)		
		Charge	g	3450		
Refrigerant oil		Type		POE		
Enclosure		Material		Steel sheet		
		Colour		BEIGE (Approximate colour of MUNSELL 10YR 7.5 / 1.0)		
Dimensions (H × W × D)	Net		mm	1290 × 900 × 330		
	Gross			1430 × 1050 × 445		
Weight	Net		kg	104		
	Gross			113		
Connection pipe	Size (Standard)	Liquid	mm	Ø 9.52 (Ø 3/8 in.)		
		Gas		Ø 15.88 (Ø 5/8 in.)		
	Method			Flare		
	Pre-charge length		m	30		
	Max. length			75		
	Max. height difference			30		
Operation range		Cooling	°C	-15 to 46		
		Heating		-15 to 24		

Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27 °CDB / 19 °CWB.and outdoor temperature of 35 °CDB / 24 °CWB.
Heating : Indoor temperature of 20 °CDB / 15 °CWB.and outdoor temperature of 7 °CDB / 6 °CWB.
Pipe length : 5 m, Height difference : 0 m. (Outdoor unit - Indoor unit)
The protective function might work when using it outside the operation range.

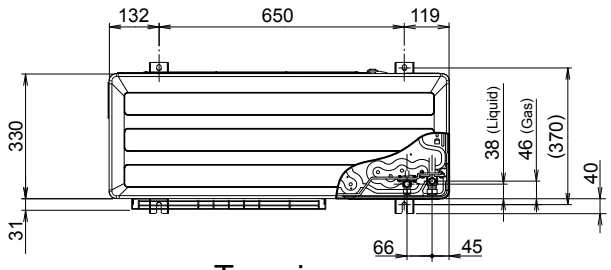
OUTDOOR UNIT

2. DIMENSIONS

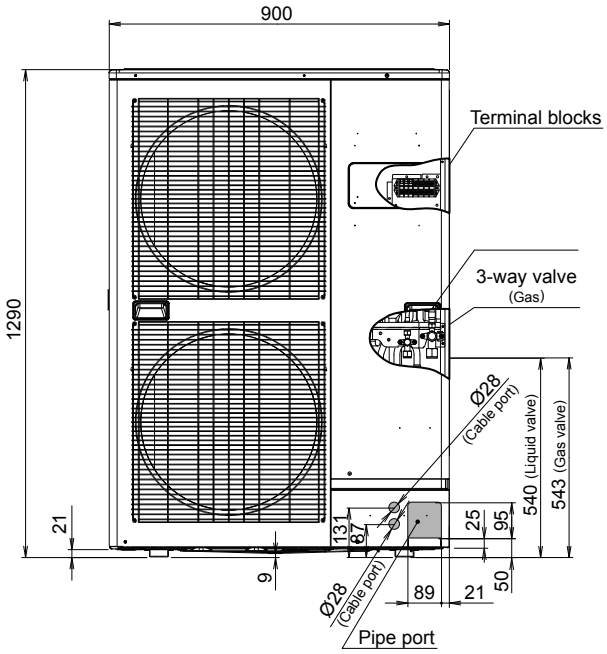
2-1. DIMENSIONS

■ MODEL: AO∗G36LA, AO∗G45LA, AO∗G54LA

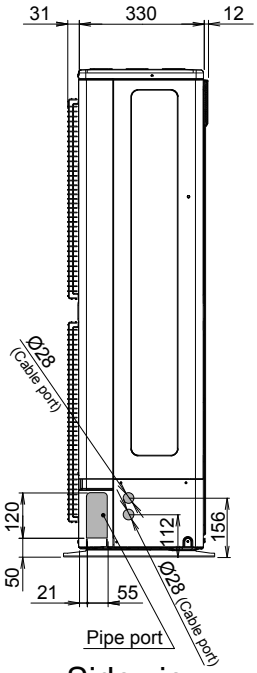
(Unit : mm)



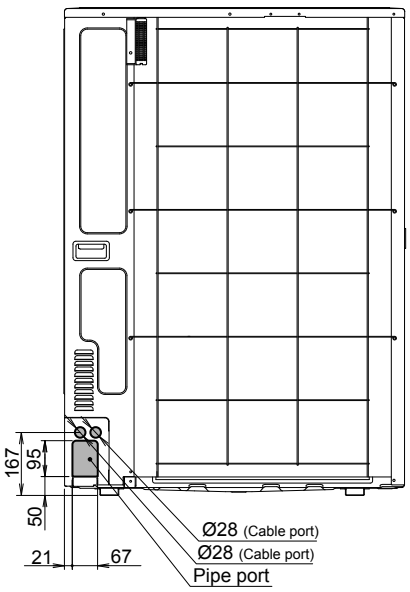
Top view



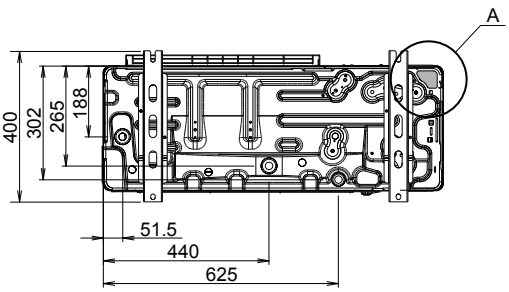
Front view



Side view

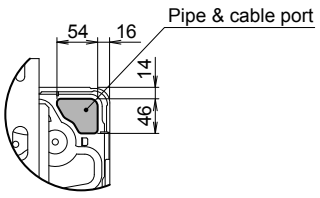


Rear view



Bottom view

Detail A



OUTDOOR UNIT

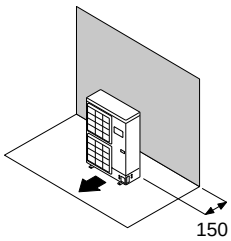
2-2. INSTALLATION PLACE

2-2-1. SINGLE OUTDOOR UNIT INSTALLATION

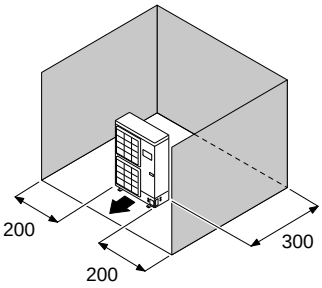
■ WHEN THE UPWARD AREA IS OPEN

(Unit : mm)

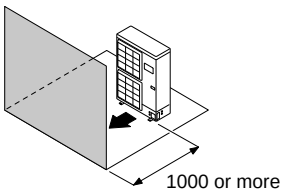
Obstacles at rear only



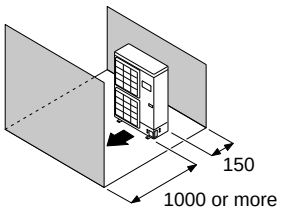
Obstacles at rear and sides only



Obstacles at front only



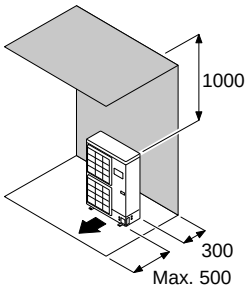
Obstacles at front and rear only



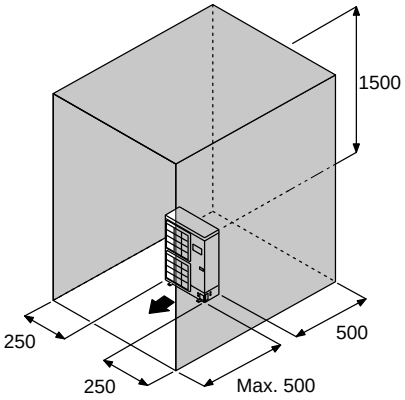
■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

(Unit : mm)

Obstacles at rear and above only



Obstacles at rear, sides, and above only



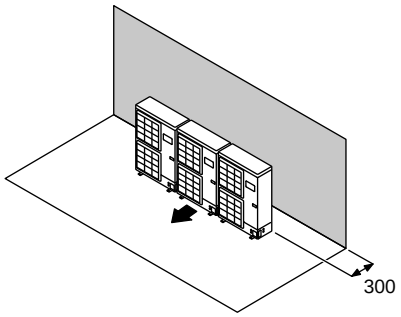
OUTDOOR UNIT

2-2-2. MULTIPLE OUTDOOR UNIT INSTALLATION

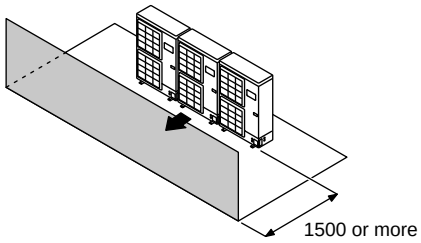
■ WHEN THE UPWARD AREA IS OPEN

(Unit : mm)

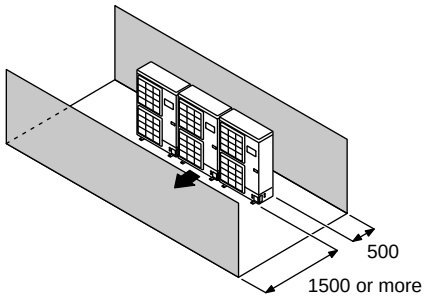
Obstacles at rear only



Obstacles at front only



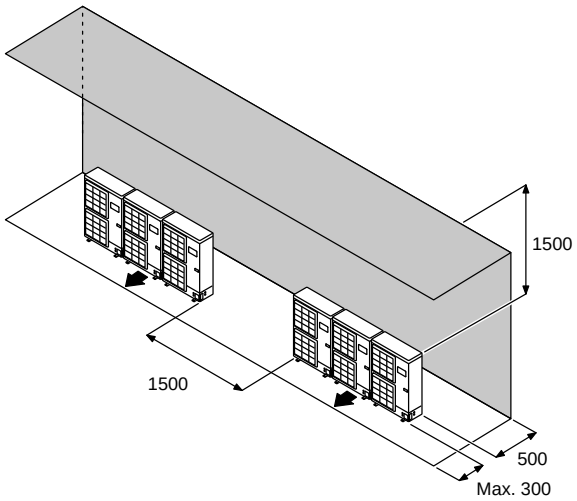
Obstacles at front and rear only



■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

(Unit : mm)

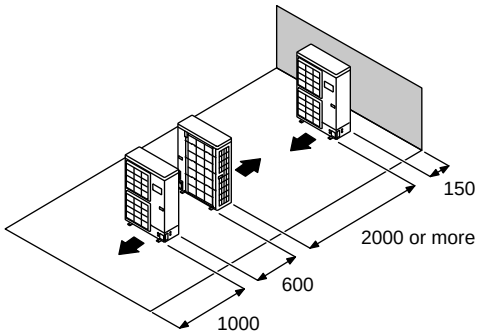
Obstacles at rear and above only



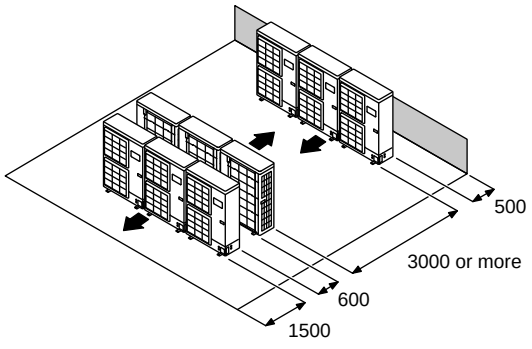
2-2-3. OUTDOOR UNIT INSTALLATION IN MULTI ROW

(Unit : mm)

Single parallel unit arrangement



Multiple parallel unit arrangement

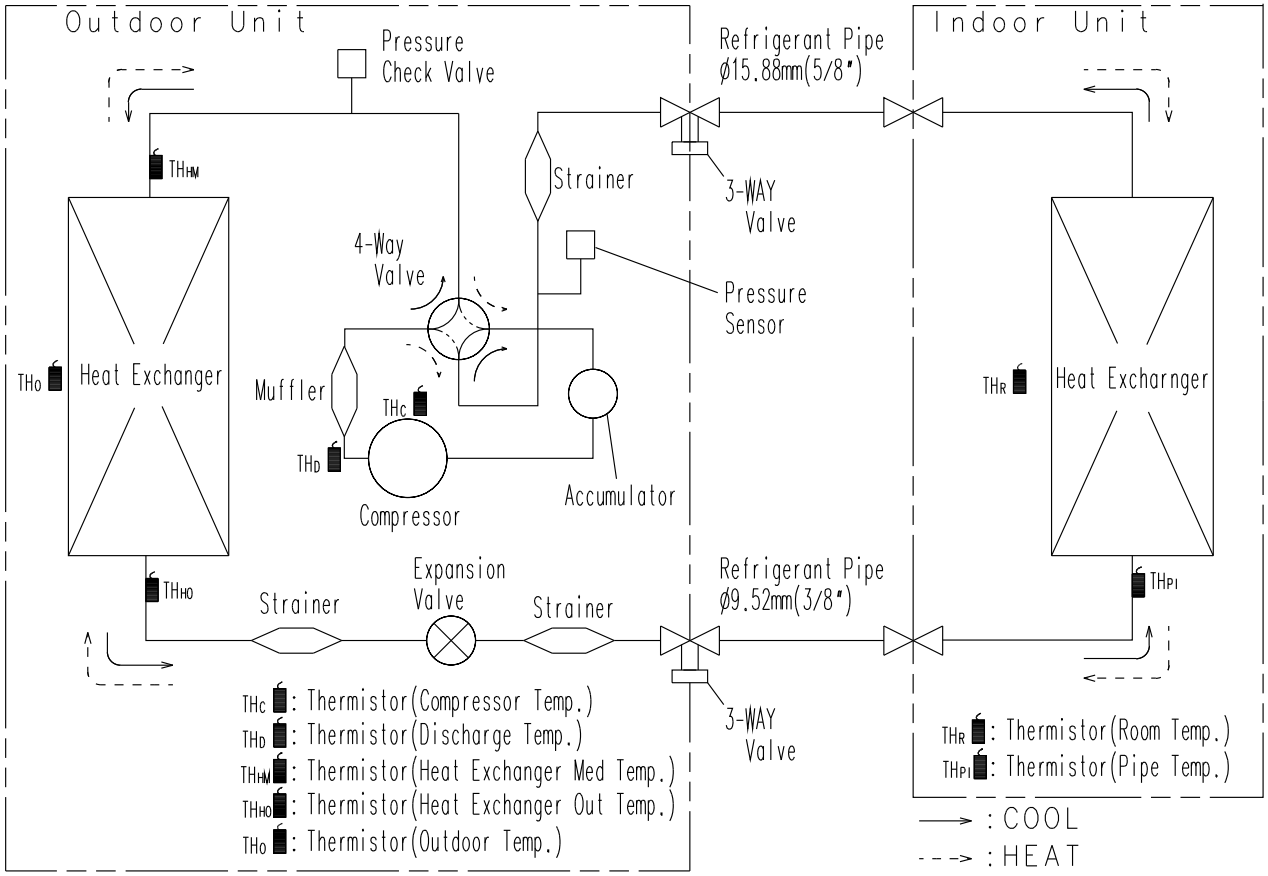


OUTDOOR UNIT

3. REFRIGERANT CIRCUIT

3-1. SINGLE

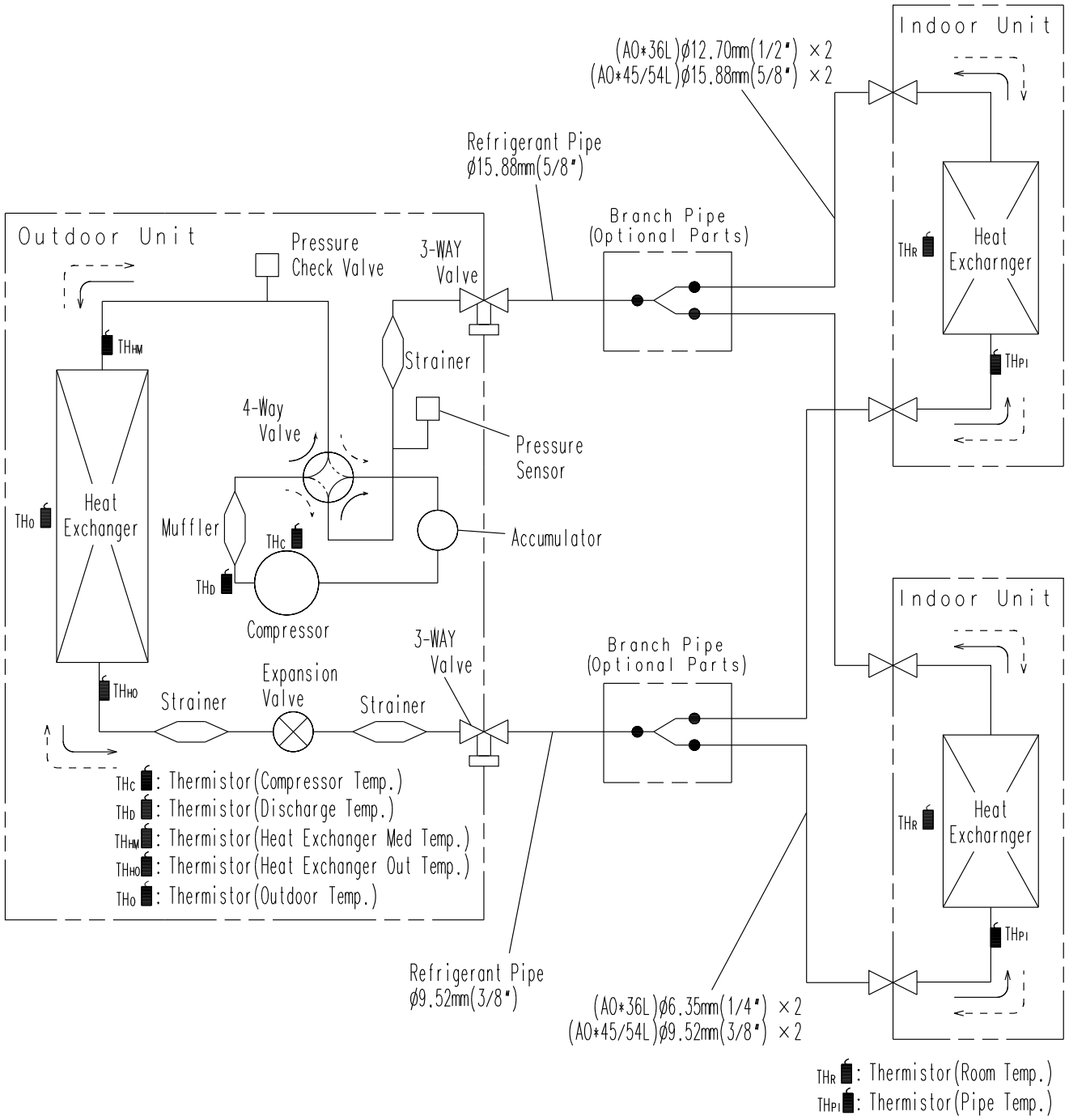
■ MODEL: AO∗G36LA, AO∗G45LA, AO∗G54LA



OUTDOOR UNIT

3-2. SIMULTANEOUS MULTI (TWIN)

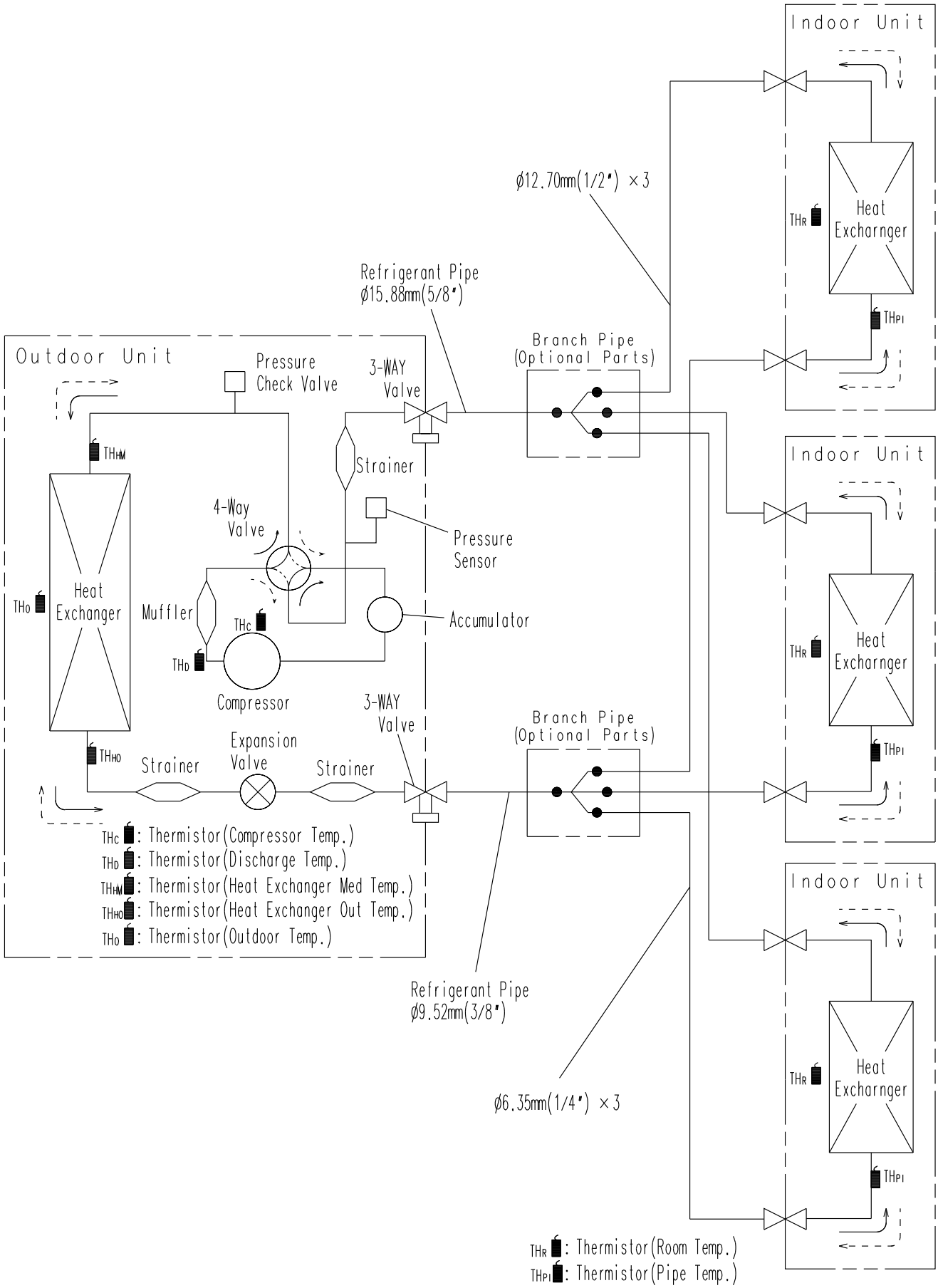
■ MODEL: AO∗G36LA, AO∗G45LA, AO∗G54LA



OUTDOOR UNIT

3-3. SIMULTANEOUS OPERATION MULTI (TRIPLE)

■ MODEL: AO∗G36LA, AO∗G45LA, AO∗G54LA

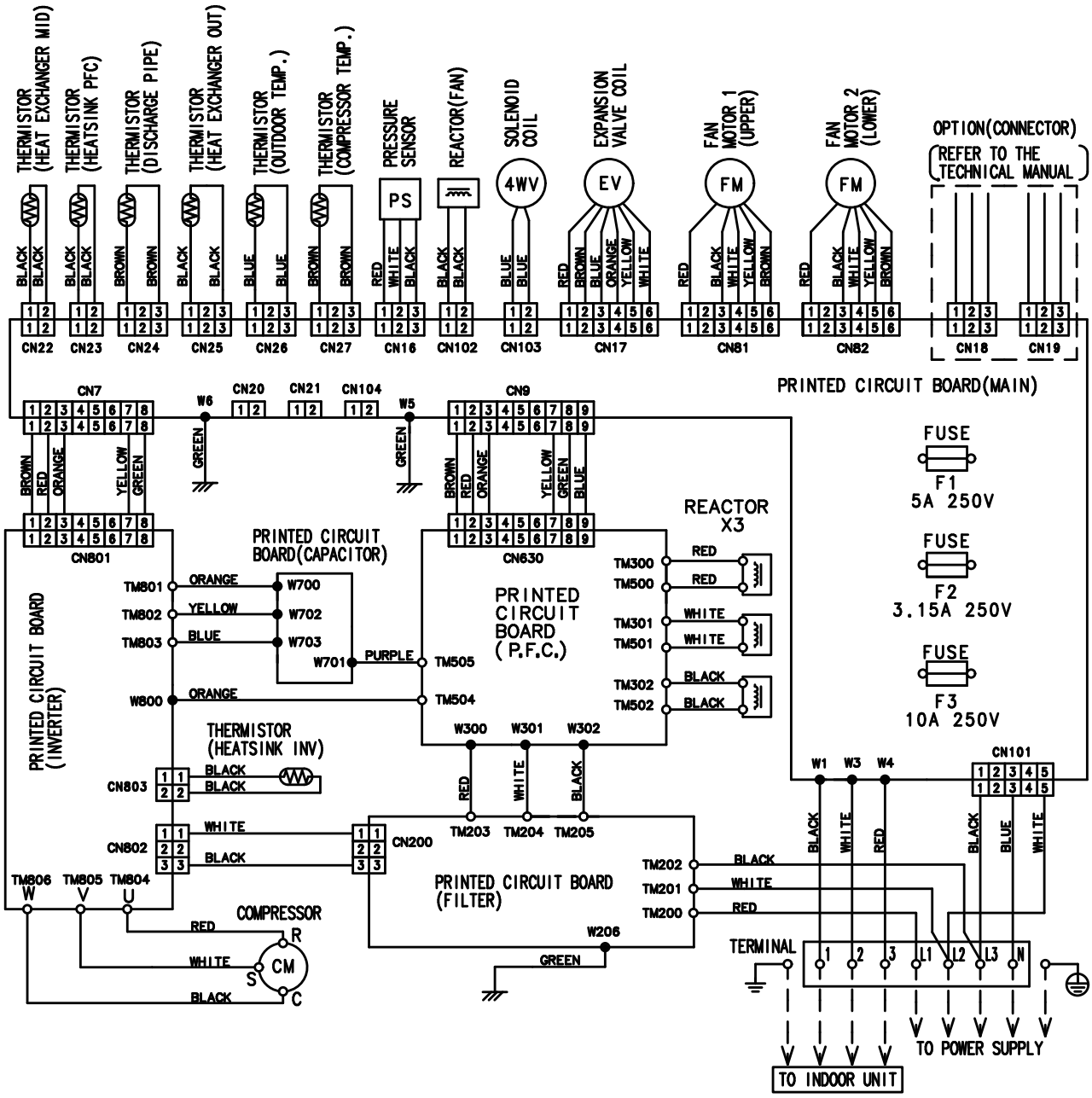


OUTDOOR UNIT

OUTDOOR UNIT

4. WIRING DIAGRAMS

■ MODEL: AO∗G36LA, AO∗G45LA, AO∗G54LA



OUTDOOR UNIT

5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE

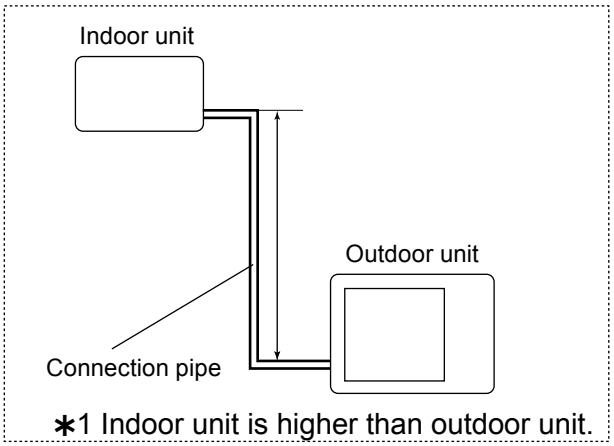
This table is created using the maximum capacity.

■ MODEL: AO∗G36LA

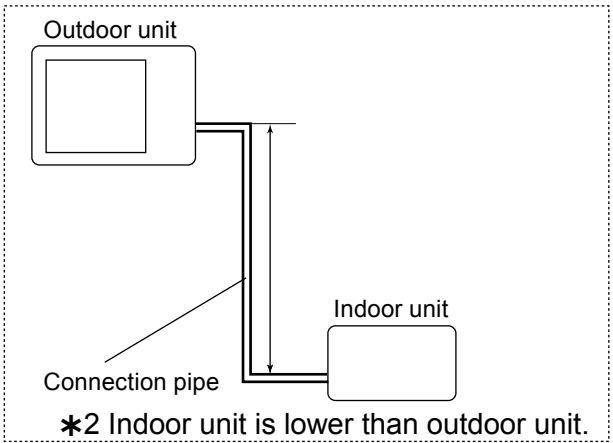
COOLING			Pipe length (m)								
			5	7.5	10	20	30	40	50	60	75
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit.	30	-	-	-	-	0.912	0.893	0.875	0.857	0.823
		20	-	-	-	0.945	0.927	0.908	0.890	0.872	0.837
		10	-	-	0.980	0.961	0.942	0.923	0.905	0.886	0.851
		7.5	-	0.988	0.984	0.965	0.946	0.927	0.908	0.890	0.854
		5	0.992	0.992	0.988	0.969	0.950	0.931	0.912	0.893	0.858
		0	1.000	1.000	0.996	0.977	0.958	0.939	0.920	0.901	0.865
	∗2 Indoor unit is lower than outdoor unit	-5	1.000	1.000	0.996	0.977	0.958	0.939	0.920	0.901	0.865
		-7.5	-	1.000	0.996	0.977	0.958	0.939	0.920	0.901	0.865
		-10	-	-	0.996	0.977	0.958	0.939	0.920	0.901	0.865
		-20	-	-	-	0.977	0.958	0.939	0.920	0.901	0.865
		-30	-	-	-	-	0.958	0.939	0.920	0.901	0.865

HEATING			Pipe length (m)								
			5	7.5	10	20	30	40	50	60	75
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit.	30	-	-	-	-	0.978	0.968	0.958	0.948	0.935
		20	-	-	-	0.988	0.978	0.968	0.958	0.948	0.935
		10	-	-	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		7.5	-	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		5	1.000	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		0	1.000	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
	∗2 Indoor unit is lower than outdoor unit	-5	0.995	0.995	0.993	0.983	0.973	0.963	0.953	0.943	0.930
		-7.5	-	0.993	0.990	0.980	0.970	0.960	0.950	0.940	0.928
		-10	-	-	0.988	0.978	0.968	0.958	0.948	0.938	0.926
		-20	-	-	-	0.968	0.958	0.948	0.938	0.929	0.916
		-30	-	-	-	-	0.948	0.939	0.929	0.919	0.907

Height difference H



∗1 Indoor unit is higher than outdoor unit.



∗2 Indoor unit is lower than outdoor unit.

OUTDOOR UNIT

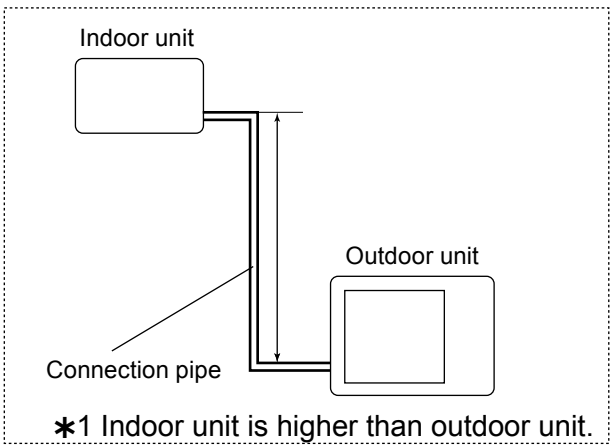
This table is created using the maximum capacity.

■ MODEL: AO∗G45LA

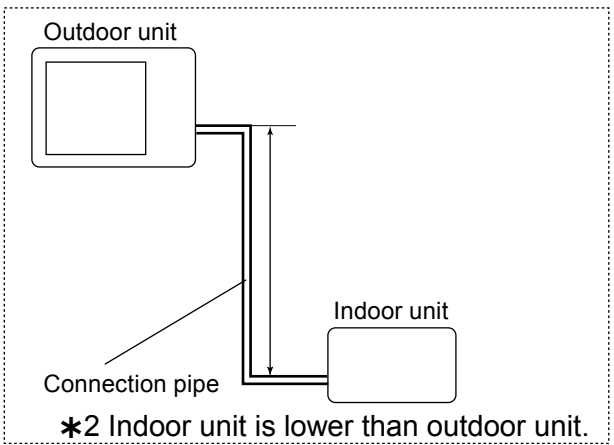
COOLING			Pipe length (m)								
			5	7.5	10	20	30	40	50	60	75
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit.	30	-	-	-	-	0.879	0.847	0.814	0.782	0.743
		20	-	-	-	0.927	0.894	0.861	0.828	0.795	0.755
		10	-	-	0.975	0.942	0.909	0.875	0.842	0.808	0.768
		7.5	-	0.988	0.979	0.946	0.912	0.879	0.845	0.811	0.771
		5	0.992	0.992	0.983	0.950	0.916	0.882	0.848	0.815	0.774
		0	1.000	1.000	0.991	0.957	0.923	0.889	0.855	0.821	0.780
	∗2 Indoor unit is lower than outdoor unit	-5	1.000	1.000	0.991	0.957	0.923	0.889	0.855	0.821	0.780
		-7.5	-	1.000	0.991	0.957	0.923	0.889	0.855	0.821	0.780
		-10	-	-	0.991	0.957	0.923	0.889	0.855	0.821	0.780
		-20	-	-	-	0.957	0.923	0.889	0.855	0.821	0.780
		-30	-	-	-	-	0.923	0.889	0.855	0.821	0.780

HEATING			Pipe length (m)								
			5	7.5	10	20	30	40	50	60	75
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit.	30	-	-	-	-	0.978	0.968	0.958	0.948	0.935
		20	-	-	-	0.988	0.978	0.968	0.958	0.948	0.935
		10	-	-	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		7.5	-	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		5	1.000	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		0	1.000	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
	∗2 Indoor unit is lower than outdoor unit	-5	0.995	0.995	0.993	0.983	0.973	0.963	0.953	0.943	0.930
		-7.5	-	0.993	0.990	0.980	0.970	0.960	0.950	0.940	0.928
		-10	-	-	0.988	0.978	0.968	0.958	0.948	0.938	0.926
		-20	-	-	-	0.968	0.958	0.948	0.938	0.929	0.916
		-30	-	-	-	-	0.948	0.939	0.929	0.919	0.907

Height difference H



∗1 Indoor unit is higher than outdoor unit.



∗2 Indoor unit is lower than outdoor unit.

OUTDOOR UNIT

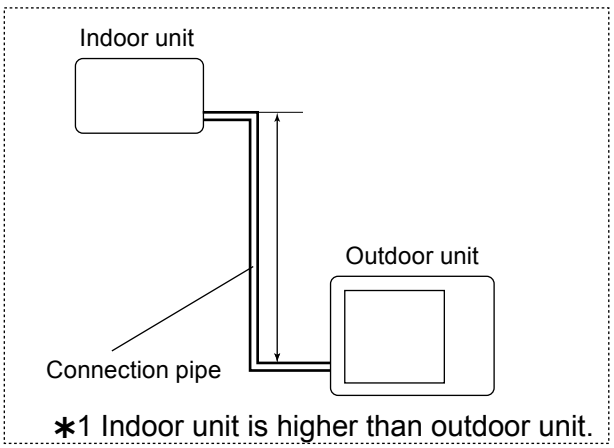
This table is created using the maximum capacity.

■ MODEL: AO∗G54LA

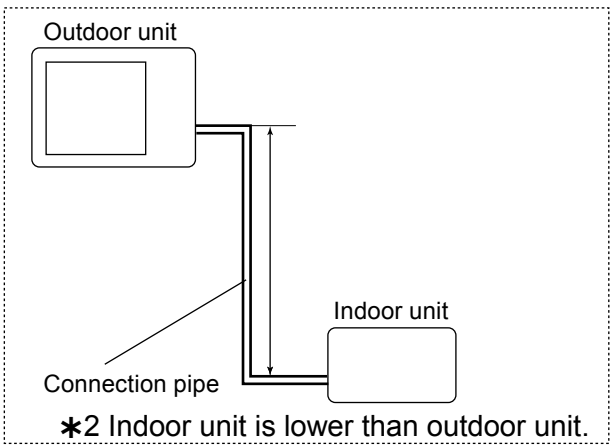
COOLING			Pipe length (m)								
			5	7.5	10	20	30	40	50	60	75
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit.	30	-	-	-	-	0.871	0.837	0.803	0.768	0.717
		20	-	-	-	0.921	0.886	0.851	0.816	0.781	0.729
		10	-	-	0.971	0.936	0.901	0.865	0.830	0.794	0.741
		7.5	-	0.988	0.975	0.940	0.904	0.869	0.833	0.798	0.744
		5	0.992	0.992	0.979	0.944	0.908	0.872	0.836	0.801	0.747
		0	1.000	1.000	0.987	0.951	0.915	0.879	0.843	0.807	0.753
	∗2 Indoor unit is lower than outdoor unit	-5	1.000	1.000	0.987	0.951	0.915	0.879	0.843	0.807	0.753
		-7.5	-	1.000	0.987	0.951	0.915	0.879	0.843	0.807	0.753
		-10	-	-	0.971	0.951	0.915	0.879	0.843	0.807	0.753
		-20	-	-	-	0.951	0.915	0.879	0.843	0.807	0.753
		-30	-	-	-	-	0.915	0.879	0.843	0.807	0.753

HEATING			Pipe length (m)								
			5	7.5	10	20	30	40	50	60	75
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit.	30	-	-	-	-	0.978	0.968	0.958	0.948	0.935
		20	-	-	-	0.988	0.978	0.968	0.958	0.948	0.935
		10	-	-	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		7.5	-	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		5	1.000	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
		0	1.000	1.000	0.998	0.988	0.978	0.968	0.958	0.948	0.935
	∗2 Indoor unit is lower than outdoor unit	-5	0.995	0.995	0.993	0.983	0.973	0.963	0.953	0.943	0.930
		-7.5	-	0.993	0.990	0.980	0.970	0.960	0.950	0.940	0.928
		-10	-	-	0.988	0.978	0.968	0.958	0.948	0.938	0.926
		-20	-	-	-	0.968	0.958	0.948	0.938	0.929	0.916
		-30	-	-	-	-	0.948	0.939	0.929	0.919	0.907

Height difference H



∗1 Indoor unit is higher than outdoor unit.



∗2 Indoor unit is lower than outdoor unit.

OUTDOOR UNIT

6. AIR FLOW

■ MODEL: AO∗G36LA, AO∗G45LA, AO∗G54LA

● Cooling

MODEL		Number of rotations (r.p.m.)	Air flow	
AO∗G36LA	Upper fan	780	m^3/h	6200
			l/s	1722
	Lower fan	750	CFM	3650
AO∗G45LA	Upper fan	850	m^3/h	6750
			l/s	1875
	Lower fan	800	CFM	3973
AO∗G54LA	Upper fan	900	m^3/h	6900
			l/s	1917
	Lower fan	800	CFM	4062

● Heating

MODEL		Number of rotations (r.p.m.)	Air flow	
AO∗G36LA	Upper fan	780	m^3/h	6200
			l/s	1722
	Lower fan	750	CFM	3650
AO∗G45LA	Upper fan	780	m^3/h	6200
			l/s	1722
	Lower fan	750	CFM	3650
AO∗G54LA	Upper fan	870	m^3/h	6900
			l/s	1917
	Lower fan	840	CFM	4062

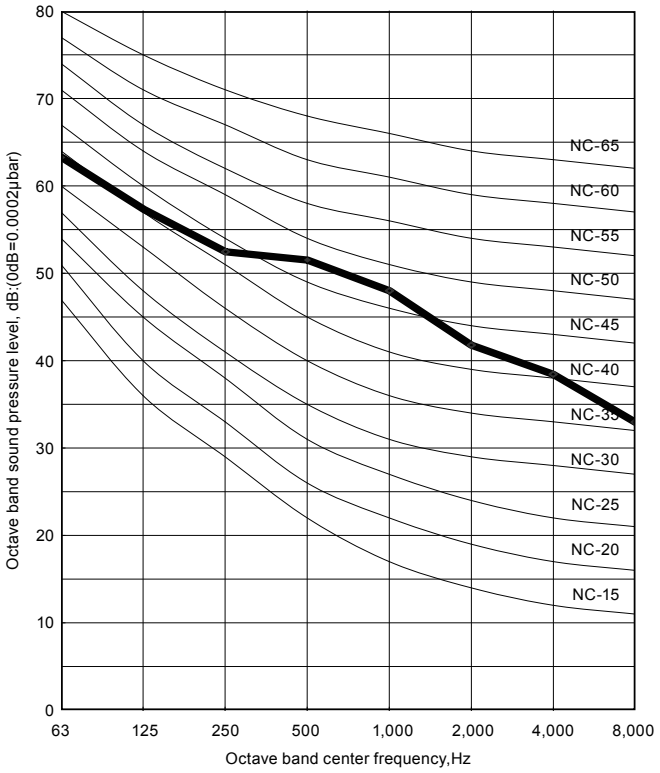
OUTDOOR UNIT

7. OPERATION NOISE

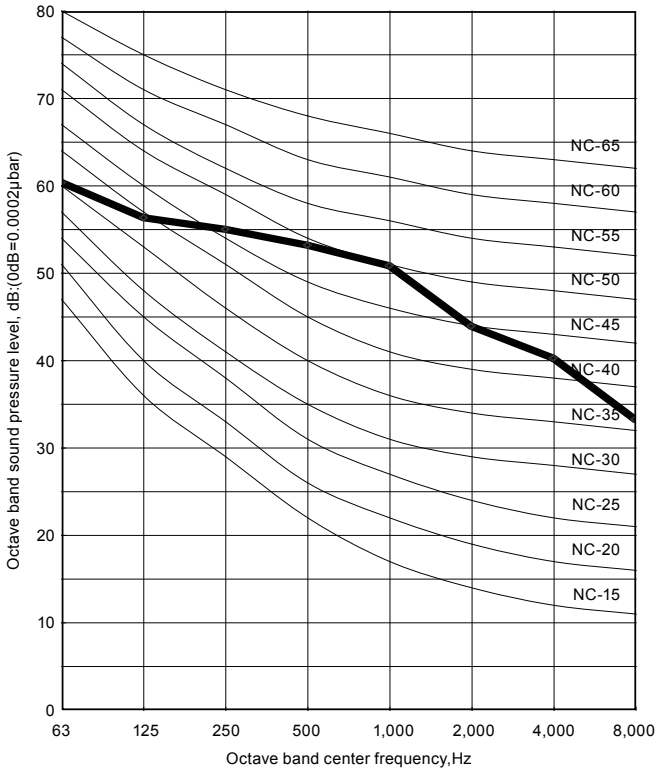
7-1. NOISE LEVEL CURVE

■ MODEL: AO∗G36LA

● Cooling

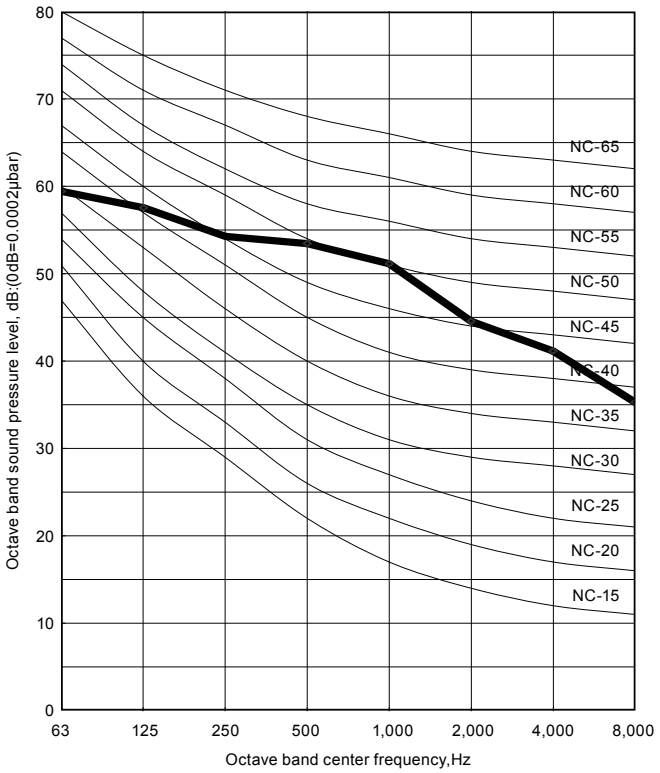


● Heating

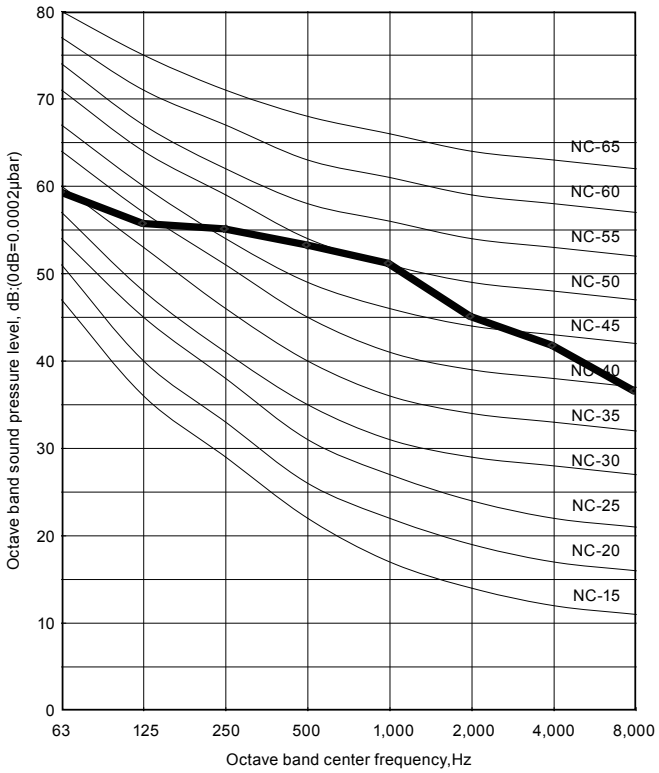


■ MODEL: AO∗G45LA

● Cooling



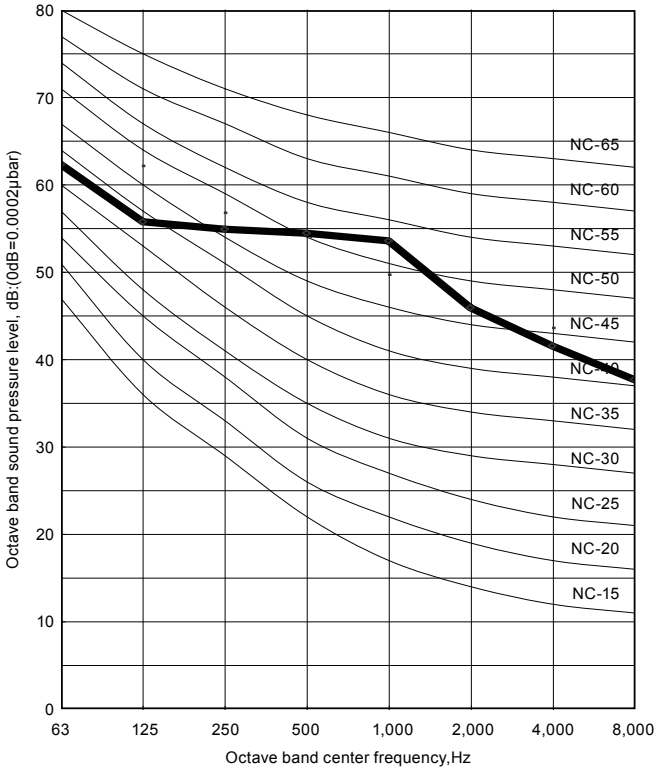
● Heating



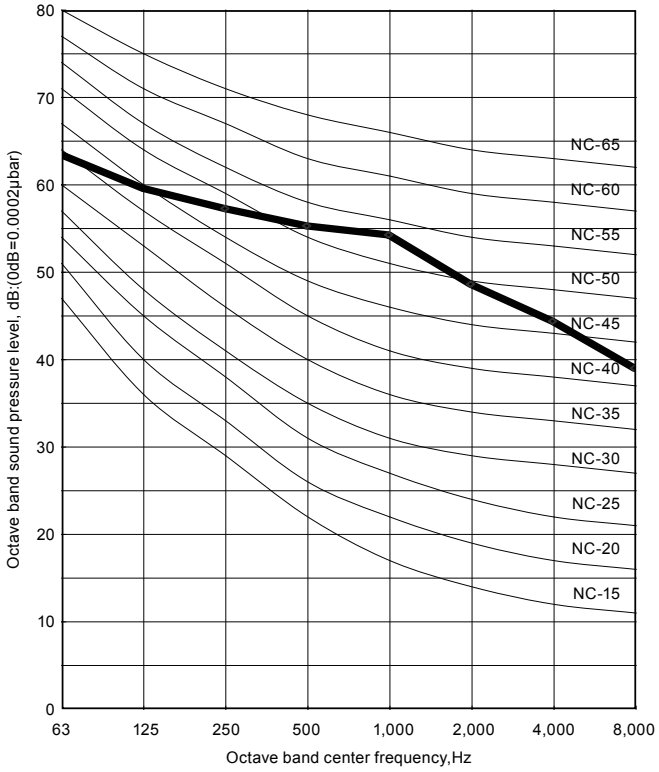
OUTDOOR UNIT

■ MODEL: AO∗G54LA

● Cooling

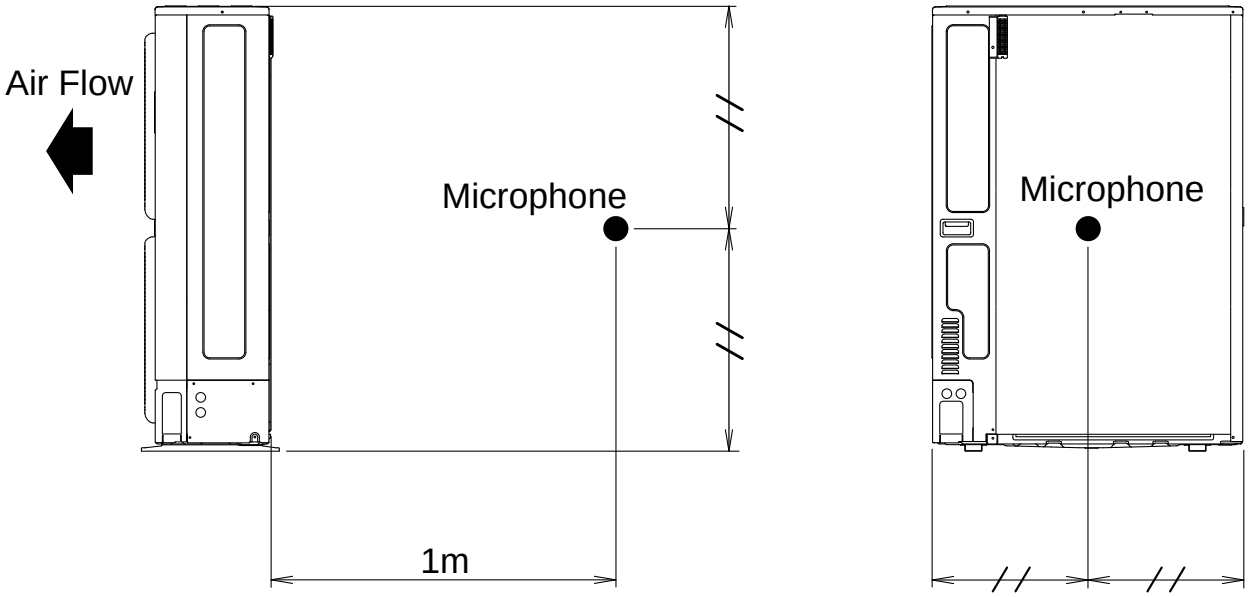


● Heating



OUTDOOR UNIT

7-2. SOUND LEVEL CHECK POINT



OUTDOOR UNIT

8. ELECTRIC CHARACTERISTICS

Model name					AO∗G36LA	AO∗G45LA	AO∗G54LA
Power supply	Voltage			V	3N ~ 400		
	Frequency			Hz	50		
*1) Max. operating current	SINGLE TYPE						
		CASSETTE TYPE		A	7.9	8.9	9.9
		DUCT TYPE		A	8.5	9.5	-
		HIGH STATIC PRESSURE DUCT TYPE		A	-	11.0	12.0
		CEILING TYPE		A	7.9	8.9	9.9
	SIMULTANEOUS OPERATION MULTI TYPE						
		TWIN	COMPACT CASSETTE TYPE	A	7.9	8.9	9.9
			SLIM DUCT TYPE	A	7.9	-	-
			DUCT TYPE	A	-	8.9	9.9
			FLOOR / CEILING TYPE	A	7.9	8.9	9.9
		TRIPLE	COMPACT CASSETTE TYPE	A	-	-	9.9
			SLIM DUCT TYPE	A	-	-	9.9
			FLOOR / CEILING TYPE	A	-	-	9.9
Starting current				A	10.0		
*2) Wiring spec.	Main fuse (Circuit breaker) Current			A	16.0		
	Power cable			mm^2	2.5(Min.)		

*1) The maximum current is the total current of indoor unit and outdoor unit.

*2) Wiring Spec:

Selected Sample

(Selected based on Japan Electrotechnical Standard and Codes Committee E0005)

OUTDOOR UNIT

9. SAFETY DEVICES

	Protection form		Model		
			AO∗G36LA	AO∗G45LA	AO∗G54LA
Circuit protection	Current fuse (Main PCB)		250V 5A		
	Current fuse (Main PCB)		250V 3.15A		
	Current fuse (Main PCB)		250V 10A		
Fan motor protection	Thermal protector		OFF: 150 ± 15 °C ON: 120 ± 15 °C		
Compressor protection	Thermal protection program (Compressor temp.)		OFF: 110 °C ON: 80 °C		
	Thermal protection program (Discharge temp.)		OFF: 115 °C ON: After 7 minutes		
High pressure protection	Thermal protection program (Heat exchanger temp.)	Cooling	OFF: 68 °C ON: 63 °C		
	Pressure sensor	Heating	OFF: 4.1 MPa ON: After 3 minutes		
Low pressure protection	Pressure sensor	Cooling	OFF: 0.12 MPa or less(for 5 minutes) ON: After 7 minutes		

OUTDOOR UNIT

Refrigerant R410A
INVERTER

AIR CONDITIONER

3 phase type

Single / Simultaneous multi system

5. SYSTEM DESIGN

DTR_SSM001E_03--CHAPTER05
2013.02.22

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5. SYSTEM DESIGN

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1. PIPE DESIGN

1-1. IMPORTANT ITEMS WHEN USING REFRIGERANT (R410A)

R410A operates at higher pressure and has less solubility with mineral oil than traditional R22 refrigerant. Therefore, the lubricant and a part of pipe material are different. Some special tools are necessary.

■ REFRIGERANT PIPING MATERIAL AND WALL THICKNESS

It is necessary to use seamless copper tubes for refrigerant use.
Thickness of tubes are shown in table below. The design pressure is 4.2 MPa.

Nominal Diameter	**(in)**	1/4"	3/8"	1/2"	5/8"	3/4"
Outside Diameter	**(mm)**	6.35	9.52	12.70	15.88	19.05
Material		JIS H3300 C1220T-O or equivalent *1				
Wall Thickness *2	**(mm)**	0.8	0.8	0.8	1.0	1.2

*1: Allowable tensile stress ≥ 33 (N/mm^2)

*2: Design pressure 4.2MPa

Please select the pipe size in accordance with local rules.

■ LUBRICANT

Refrigerant	R410A (Mixed refrigerant)
Lubricant	Synthetic oil

■ TOOLS

R410A work requires a number of special tools. Since the tools (with *3 symbol) for R22 work cannot be used for R410A, prepare them beforehand.

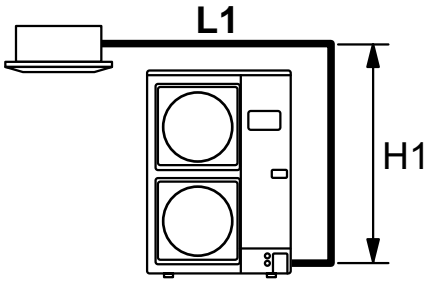
Tool name	Process and application	
Pipe cutter	Pipe cutting	Refrigerant piping work
Flaring tool *3	Pipe flaring work	
Torque wrench *3	Flare nut connection	
Expander	Expansion at pipe connection	
Pipe bender	Pipe bending work	
Nitrogen gas	Pipe interior oxidation prevention	Air tightness test
Welder	Pipe brazing	
Gauge manifold *3	Vacuum evacuation and refrigerant charging Operation check	Air tightness test ~ Refrigerant additional charging
Charging hose *3		
Vacuum pump (with adaptor) *3		Vacuum drying
Electronic scale for refrigerant charging		Refrigerant additional charging
Gas leak tester *3	Gas leakage test	

*3: Please refer to a service manual for details.

SYSTEM DESIGN

1-2. LIMITATION

■ IN THE CASE OF SINGLE SYSTEM INSTALLATION

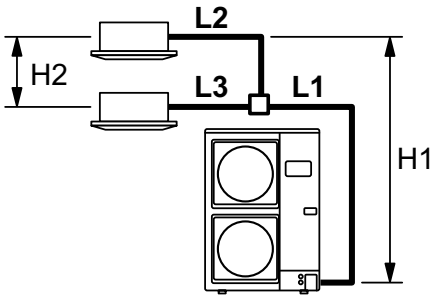


Model (Outdoor unit)	36 model	45 model	54 model
Pipe diameter <Liquid/Gas> (Standard) [mm (in.)]	9.52 (3/8) / 15.88 (5/8)		
Max. piping length (L1) [m]	75*1		
Min. piping length (L1) [m]	5		
Max. height difference (H1) <Indoor unit to outdoor unit> [m]	30		

*1: For the standard pipe diameter.

■ IN THE CASE OF SIMULTANEOUS MULTI SYSTEM INSTALLATION

● Twin type



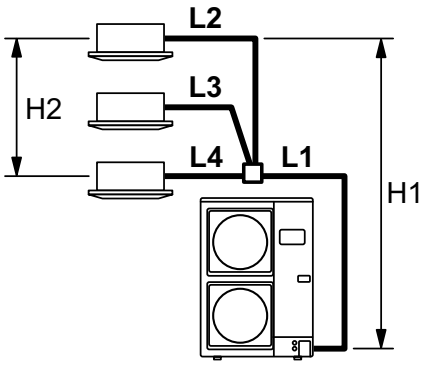
Note:
Be certain to install indoor units in the same room because the combinations are for simultaneous operation.
The lengths after branching should be equal if possible.

Model (Outdoor unit)	36 model	45 model	54 model
Model (Indoor unit)	18 model x 2	22 model x 2	24 model x2
Main pipe diameter (L1) <Liquid/Gas> (Standard) [mm (in.)]	9.52 (3/8) / 15.88 (5/8)		
Branch pipe diameter (L2, L3) <Liquid/Gas> [mm (in.)]	6.35 (1/4) / 12.70 (1/2)	9.52 (3/8) / 15.88 (5/8)	
Max. piping length (L1+L2+L3) [m]	75*1		
Min. piping length (L1+L2+L3) [m]	5		
Max. branch piping length (L2, L3) [m]	20		
Max. difference between branch lengths (L2 to L3) [m]	8		
Max. height difference (H1) <Indoor unit to outdoor unit> [m]	30		
Max. height difference (H2) <Indoor unit to indoor unit> [m]	0.5		

*1: For the standard pipe diameter.

SYSTEM DESIGN

● Triple type



Note:
Be certain to install indoor units in the same room because the combinations are for simultaneous operation.
The lengths after branching should be equal if possible.

Model (Outdoor unit)	54 model
Model (Indoor unit)	18 model x 3
Main pipe diameter (L1) <Liquid/Gas> (Standard) [mm (in.)]	9.52 (3/8) / 15.88 (5/8)
Branch pipe diameter (L2, L3, L4) <Liquid/Gas> [mm (in.)]	6.35 (1/4) / 12.70 (1/2)
Max. piping length (L1+L2+L3+L4) [m]	75*1
Min. piping length (L1+L2+L3+L4) [m]	5
Max. branch piping length (L2, L3, L4) [m]	20
Max. difference between branch lengths (L2 to L4) [m]	8
Max. height difference (H1) <Indoor unit to outdoor unit> [m]	30
Max. height difference (H2) <Indoor unit to indoor unit> [m]	0.5

*1: For the standard pipe diameter.

SYSTEM DESIGN

■ CAUTION

Keep the "piping limitation" for correct operation.

● Allowable height difference:

If the height difference between the indoor unit and outdoor unit is larger than the allowable value:

*The pressure loss will be larger → Insufficient cooling and heating
*The refrigerant in liquid pipe will flush → Refrigerant flow noise generate at indoor unit
*The refrigerant oil will not return → Insufficient refrigerant oil resulting in compressor damage

If the height difference between indoor unit is larger than the allowable value:

*The refrigerant flow balance will be poor → Insufficient cooling and heating (poor balance)
*Refrigerant oil will collect in the piping or non-operating indoor units
→ Insufficient refrigerant oil resulting in compressor damage

● Pipe length:

If the pipe length is longer than prescribed:

*The pressure loss will be larger → Insufficient cooling and heating
*Too much refrigerant will be charged → Liquid backs up resulting in compressor damage
*The refrigerant oil will not return → Insufficient refrigerant oil resulting in compressor damage

● Pipe size:

If the pipe size is larger than designated size:

*The refrigerant flow velocity will drop. Refrigerant oil will not return to the outdoor unit.
→ Insufficient refrigerant oil resulting in compressor damage
*The refrigerant in liquid pipe will flush easily → Insufficient cooling and heating

If the pipe size is smaller than designated size:

*The refrigerant circulation volume will drop → Insufficient cooling and heating
*The pressure loss will be larger → Insufficient cooling and heating

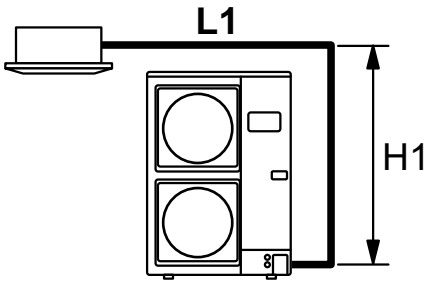
SYSTEM DESIGN

1-3. PIPE SIZE

■ PIPE SIZE SELECTION

• The figures enclosed by a thick-lined frame indicate the standard pipe diameter and max. piping length.

● Single system installation:

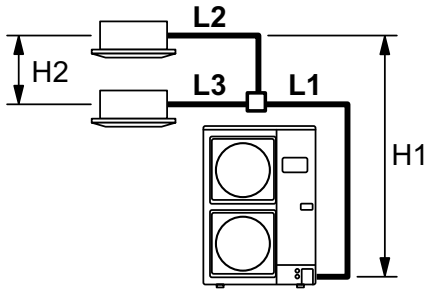


Model		36 model / 45 model / 54 model			
Pipe diameter [mm (in.)]	Liquid pipes	9.52 (3/8)		12.70 (1/2)	
	Gas pipes	15.88 (5/8)	19.05 (3/4)	15.88 (5/8)	19.05 (3/4)
Piping length [m (m)]	Max. piping length < L1 > (Pre-charge length)	75 [30]	50 [30]	35 [15]	35 [15]

● Simultaneous multi system installation:

• The figures enclosed by a thick-lined frame indicate the standard pipe diameter and max. piping length.

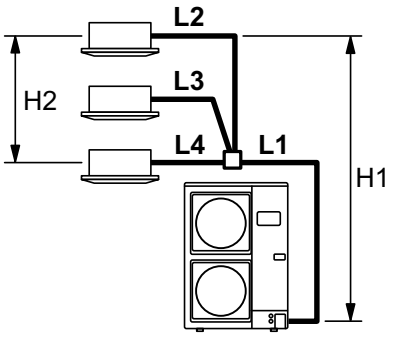
Twin type



Model		36 model			
Main pipe diameter (L1) [mm (in.)]	Liquid pipes	9.52 (3/8)		12.70 (1/2)	
	Gas pipes	15.88 (5/8)	19.05 (3/4)	15.88 (5/8)	19.05 (3/4)
Branch pipe diameter (L2, L3) [mm (in.)]	Liquid pipes	6.35 (1/4)			
	Gas pipes	12.70 (1/2)			
Piping length [m (m)]	Max. piping length <L1+L2+L3> (Pre-charge length)	75 [30]	50 [30]	35 [15]	35 [15]
Model		**45 model / 54 model**			
Main pipe diameter (L1) [mm (in.)]	Liquid pipes	9.52 (3/8)		12.70 (1/2)	
	Gas pipes	15.88 (5/8)	19.05 (3/4)	15.88 (5/8)	19.05 (3/4)
Branch pipe diameter (L2, L3) [mm (in.)]	Liquid pipes	9.52 (3/8)			
	Gas pipes	15.88 (5/8)			
Piping length [m (m)]	Max. piping length <L1+L2+L3> (Pre-charge length)	75 [30]	50 [30]	35 [15]	35 [15]

SYSTEM DESIGN

Triple type



Model		54 model			
Main pipe diameter (L1) [mm (in.)]	Liquid pipes	9.52 (3/8)		12.70 (1/2)	
	Gas pipes	15.88 (5/8)	19.05 (3/4)	15.88 (5/8)	19.05 (3/4)
Branch pipe diameter (L2, L3, L4) [mm (in.)]	Liquid pipes	6.35 (1/4)			
	Gas pipes	12.70 (1/2)			
Piping length [m (m)]	Max. piping length <L1+L2+L3+L4> *1 (Pre-charge length)	75 [30]	50 [30]	35 [15]	35 [15]

*1: For the standard pipe diameter.

■ BRANCH PIPES (OPTIONAL PARTS)

Model (Outdoor unit connection)	Type	Number of indoor units	Kit name
36 model	Twin connection	2	UTP-SX236□
45 model 54 model		2	UTP-SX254□
54 model	Triple connection	3	UTP-SX354□

SYSTEM DESIGN

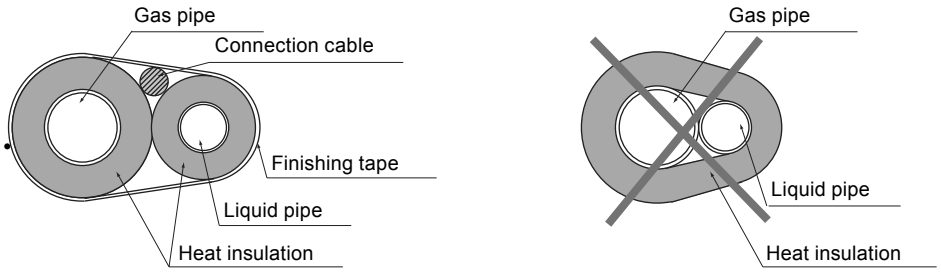
1-4. SELECTION OF PIPE HEAT INSULATING MATERIAL

- Always insulate the refrigerant pipe to prevent condensation and water droplets by the refrigerant pipe.
- Decide the thickness of the heat insulating material by referring to the recommended minimum thickness in Table 1. (For installation condition T=32°C(DB),humidity≤70%, humidity≤75%, humidity≤80%, humidity≤85%)
- When the outdoor unit is installed in a higher position than the indoor unit, fill the connecting part gap with putty, etc. to prevent the dew condensation water of the valve of the outdoor unit from flowing to the indoors from the gap between the pipe and the heat insulating material.
- Liquid pipe and gas pipe should be completely insulated with same specification.
- In case not to insulate and not to seal refrigerant pipe completely, it will become the cause of water leak.

Table1 Size of refrigerant pipe and recommended minimum thickness of heat insulating material
(In case a heat insulating material which thermal conductivity is equal to or less than 0.040 W/(m·k) is used.)

		Recommended minimum thickness for heat insulating material (mm)			
Relative humidity		≤70%	≤75%	≤80%	≤85%
Refrigerant pipe Outside diameter mm (in.)	6.35 (1/4")	8	10	13	17
	9.52 (3/8")	9	11	14	18
	12.70 (1/2")	10	12	15	19
	15.88 (5/8")	10	12	16	20
	19.05 (3/4")	10	13	16	21

- When an ambient temperature and relative humidity exceed 32°C (DB)and 85% respectively, please strengthen heat insulation of refrigerant pipe. If necessary put a heat insulation on indoor unit casing. When not strengthening heat insulation of refrigerant pipe, the surface of the heat insulation may be dewed.
- Since gas pipe becomes high temperature at heating operation for heatpump type, please select the heat insulating material which heat-resistant temperature is 120°C or more.



- Make sure that pipe is covered completely by the heat insulation,not expoding to air. Inadequate heat insulation may cause condensation.
- Do not cover heat insulation gas and liquid pipes together as above figure. It may cause condensation and capacity drop by heat loss.

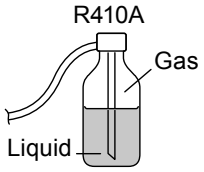
SYSTEM DESIGN

1-5. ADDITIONAL CHARGE CALCULATION

■ CAUTION

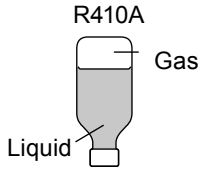
- After vacuuming the system, add refrigerant.
- When moving and installing the air conditioner, do not mix gas other than the specified refrigerant R410A inside the refrigerant cycle.
- Do not reuse recovered refrigerant.
- When charging the refrigerant R410A, always use an electronic scales for refrigerant charging (to measure the refrigerant by weight). Adding more refrigerant than the specified amount will cause a malfunction.
- When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable. Adding refrigerant through the gas pipe will cause a malfunction.
- Check if the steel cylinder has a siphon installed or not before filling. (There is an indication “with siphon for filling liquid” on the steel cylinder.)

FILLING METHOD FOR CYLINDER WITH SIPHON



Set the cylinder vertical and fill with the liquid.
(Liquid can be filled without turning bottom up with the siphon inside.)

FILLING METHOD FOR OTHER CYLINDERS



Turn bottom up and fill with liquid.
(Be careful to avoid turning over the cylinder.)

SYSTEM DESIGN

- Be sure to use the special tools for R410A for pressure resistance and to avoid mixing of impure substances.
- If the units are further apart than the maximum pipe length, correct operation can not be guaranteed.
- Make sure to back closing valve after refrigerant charging. Otherwise, the compressor may fail.
- Minimize refrigerant release to the air. Excessive release is prohibited under the Freon Collection and Destruction Law.

■ FOR PRE-CHARGE LENGTH

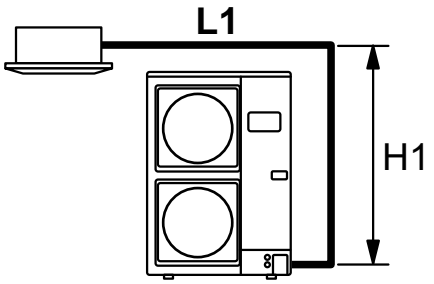
Refrigerant pipe size	Piping length (L) *Pre-charge [m]
Standard	30
Size up (Liquid pipe)	15

■ IF ADDITIONAL REFRIGERANT IS REQUIRED

- When the piping is longer than pre-charge length, additional charging is necessary.
- For the additional amount, see the table below.

Additional charging amount

● Single system

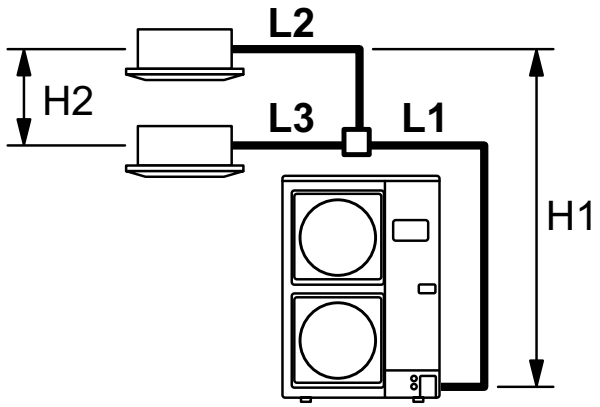


L1 > Pre-charge length

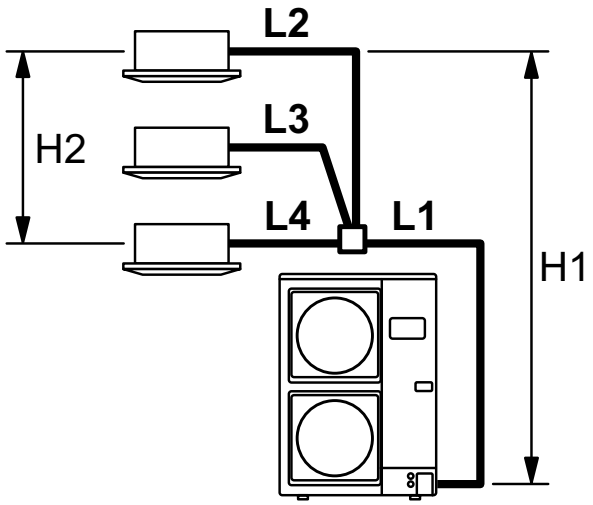
Refrigerant pipe size [mm (in.)]			Additional charging amount [g]					Rate [g/m]
Standard	Piping length		30 m or less	40 m	50 m	60 m	70 m	
	Liquid	9.52 (3/8)	None	500	1,000	1,500	2,000	50
	Gas	15.88 (5/8)						
Size up	Piping length		30 m or less	40 m	50 m			
	Liquid	9.52 (3/8)	None	500	1,000			50
	Gas	19.05 (3/4)						
	Piping length		15 m or less	25 m	35 m			
	Liquid	12.70 (1/2)	None	1,000	2,000			100
	Gas	15.88 (5/8)						
		19.05 (3/4)						

● Simultaneous multi system

Twin type



Triple type



Twin type: L1+L2+L3 > Pre-charge length
Triple type: L1+L2+L3+L4 > Pre-charge length

The additional charging amount for twin / triple type will be calculated as follows.

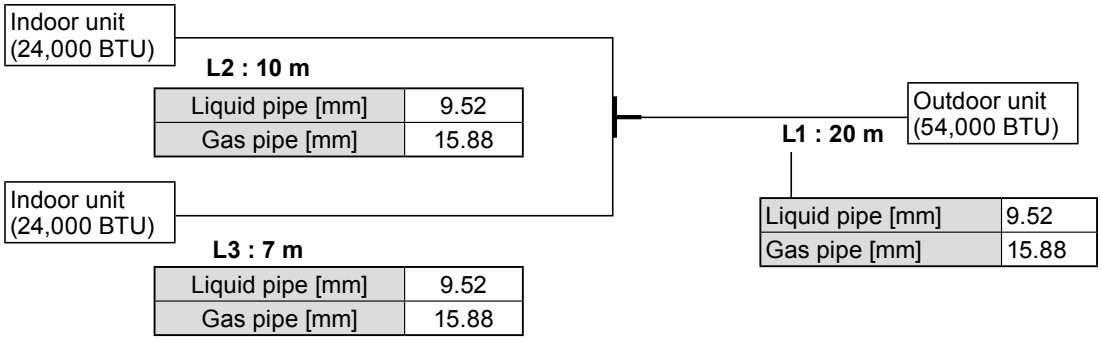
Additional charging amount (g)
= (A x 100) + (B x 50) + (C x 30) - 1,500

- A = Piping length (m) of liquid pipe [12.70 mm (1/2 in.)]
- B = Piping length (m) of liquid pipe [9.52 mm (3/8 in.)]
- C = Piping length (m) of liquid pipe [6.35 mm (1/4 in.)]

- Do not remove refrigerant, even if the additional amount calculated is negative.

SYSTEM DESIGN

(Example 1)

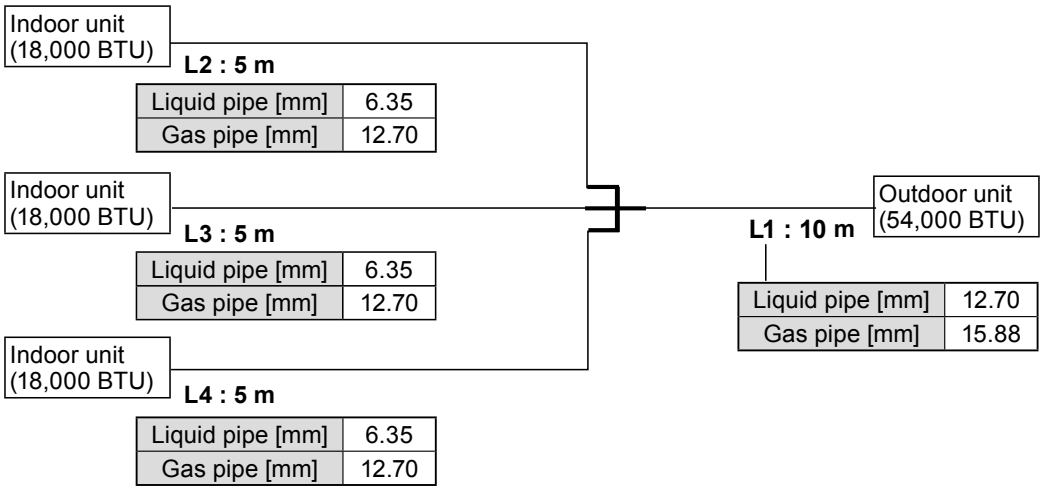


- Additional charging amount

Liquid pipe diameter [mm]	Piping length [m]	Coefficient
12.70	0	A = 0
9.52	37	B = 37
6.35	0	C = 0

Applying the formula,
(0 x 100) + (37 x 50) + (0 x 30) - 1500 = 350
The additional charging amount is 350 g.

(Example 2)



- Additional charging amount

Liquid pipe diameter [mm]	Piping length [m]	Coefficient
12.70	10	A = 10
9.52	0	B = 0
6.35	15	C = 15

Applying to the formula,
(10 x 100) + (0 x 50) + (15 x 30) - 1500 = –50
The calculated value is negative. Do not add or remove any refrigerant.

SYSTEM DESIGN

2. PIPING CONNECTION

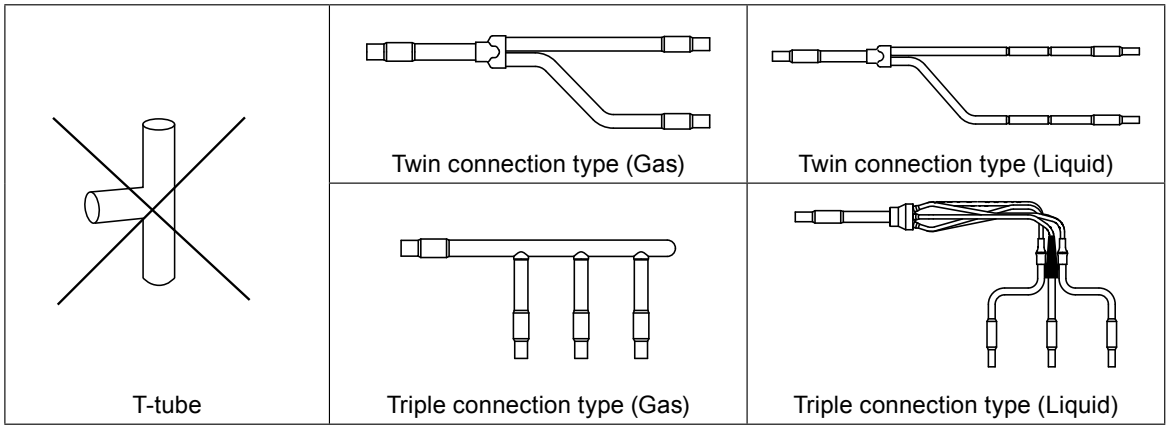
2-1. CAUTION OF PIPING

■ CAUTION

Keep the permissible length of every piping limitation to prevent a defect or cooling/heating failure.

● Piping material

- Use the designated size (Diameter & thickness) of refrigerant pipes.
- Those pipes purchased locally may contain dust inside. Please blow out the dust by dried inert gas when using.
- To process the branch, do not use T-shaped pipe, which causes a uneven refrigerant flow. Use the optionally available standard branch kit.



- When replacing the unit, never use piping which has been used for previous installations. Only use the new piping.

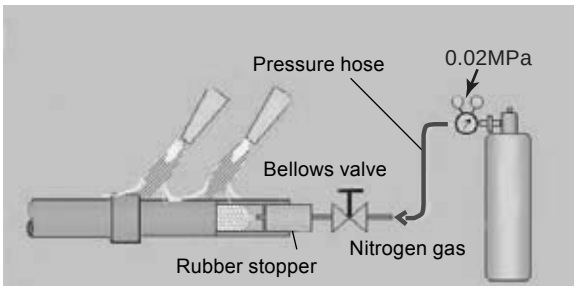
● Piping process strage

- Be careful to avoid the dust or water falling into the pipe when performing piping process and piping installation.
- When processing the pipe, make the number of bending portion as few as possible, and the bending radius as large as possible.
- If the diameter of the required pipe is different from the branch unit, either cut it out or use the reducer.

SYSTEM DESIGN

● Brazing

- While Brazing the pipes, be sure to blow dry nitrogen gas through them.
- If nitrogen gas is not blown through the pipes while they are being brazed, an oxidized layer may form on the inside of the pipes. If this occurs, the cooling efficiency may decrease and the air conditioner unit (compressor, valves, etc.) cause malfunction.



- When brazing the pipes, do not use flux. If the flux is chlorine-based, the pipes will corrode and when the flux contains fluorine, the refrigerant oil will deteriorate, etc. Using the flux has an adverse affect on the refrigerant piping system.
- For brazing materials, use phosphor copper solder that does not require flux.

● Piping treatment

- The pipes vibrate, expand, and contract during operation, so if loads are concentrated in one area, it could cause cracks in the pipes. Provide the pipe supports every 2 to 3m.
- Make sure to insulate the refrigeration pipes separately with ample thickness of heat-resistant polyethylene form etc. For the connecting portion, apply the enough insulation to avoid any gap.

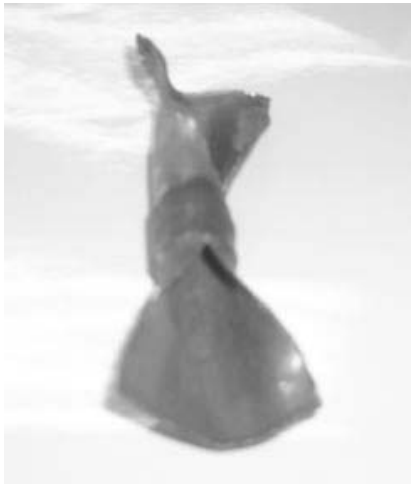
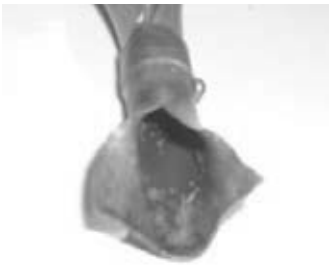
■ EXAMPLE

● Brazing

While brazing the pipe, be sure to blow dry nitrogen gas through the pipes.

If not used, it will be caused to damage for compressor and clog the strainer and electronic expansion valve.

Example) Inside state of brazing pipe section

Nitrogen gas used	Nitrogen gas used but not sufficient (Oxygen gas still inside the pipe)	Nitrogen gas does not used
		

SYSTEM DESIGN

2-2. PIPING TO OUTDOOR UNIT

■ PIPING METHOD

● Knock out

⚠ CAUTION
• Be careful not to deform or scratch the panel while opening the knock out holes.
• To protect the piping insulation after opening a knock out hole, remove any burrs from the edge of the hole. It is recommended to apply rust prevention paint to the edge of the hole.

- Pipes can be connected from 4 directions, front, lateral side, rear side and bottom. (Fig. A)
- When connecting at the bottom, remove the service panel and piping cover on the front of the outdoor unit, and open the knock out hole provided at the bottom corner of the piping outlet.
- It can be installed as shown on “Fig. B” cutting out the 2 slits as indicated on “Fig. C”. (When cutting slits, use a steel saw.)

Fig. A

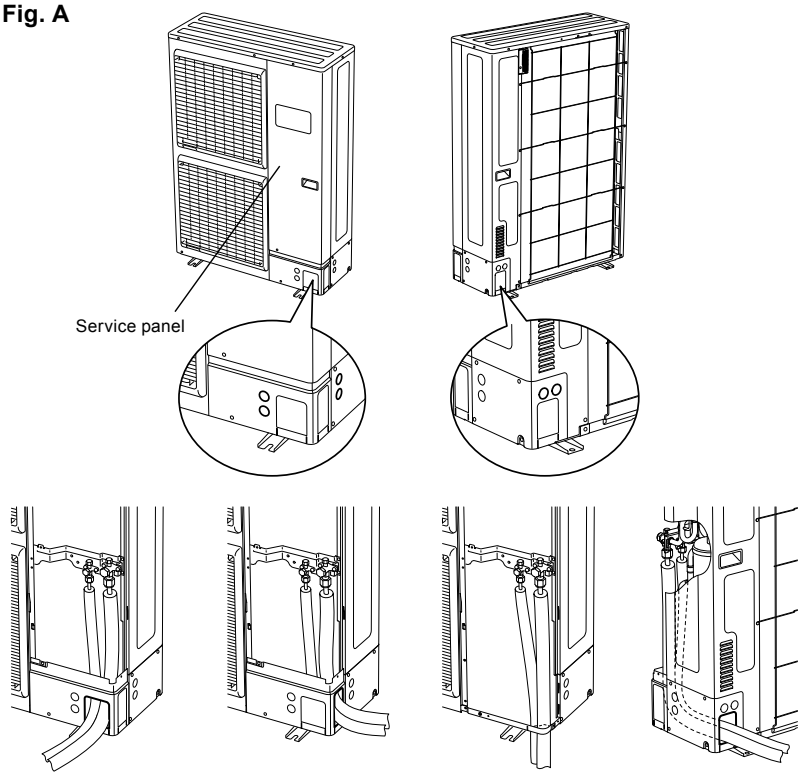


Fig. B

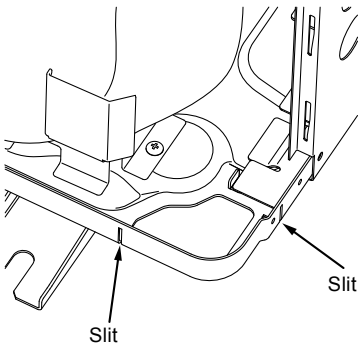
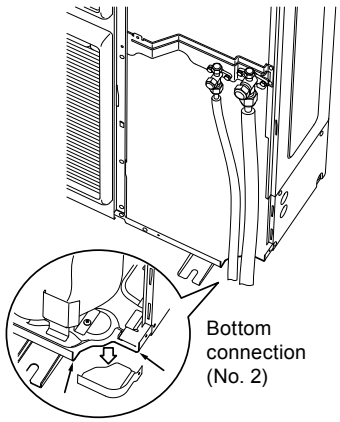


Fig. C



SYSTEM DESIGN

2-3. FLARE CONNECTION

⚠ CAUTION
• Do not use mineral oil on a flared part. Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
• While welding the pipes, be sure to blow dry nitrogen gas through them.
• The maximum lengths of this product are shown in the table. If the units are further apart than this, correct operation cannot be guaranteed.

■ FLARING

- Use special pipe cutter and flare tool exclusive for R410A.

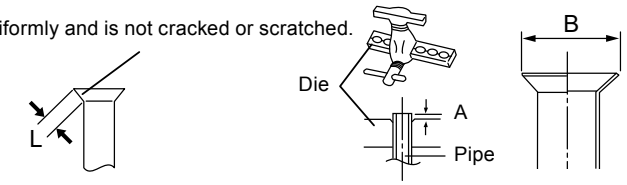
(1) Cut the connection pipe to the necessary length with a pipe cutter.

(2) Hold the pipe downward so that the cuttings will not enter the pipe and remove any burrs.

(3) Insert the flare nut (always use the flare nut attached to the indoor and outdoor units respectively) onto the pipe and perform the flare processing with a flare tool.
Leakage of refrigerant may result if other flare nuts are used.

(4) Protect the pipes by pinching them or with tape to prevent dust, dirt, or water from entering the pipes.

Check if [L] is flared uniformly and is not cracked or scratched.

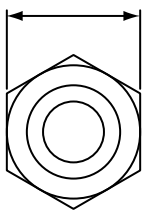


Pipe outside diameter [mm (in.)]	Dimension A [mm]
	Flare tool for R410A, clutch type
6.35 (1/4)	0 to 0.5
9.52 (3/8)	
12.70 (1/2)	
15.88 (5/8)	
19.05 (3/4)	

Pipe outside diameter [mm (in.)]	Dimension B $^{0}_{-0.4}$ [mm]
6.35 (1/4)	9.1
9.52 (3/8)	13.2
12.70 (1/2)	16.6
15.88 (5/8)	19.7
19.05 (3/4)	24.0

- When using conventional flare tools to flare R410A pipes, the dimension A should be approximately 0.5 mm more than indicated in the table (for flaring with R410A flare tools) to achieve the specified flaring. Use a thickness gauge to measure the dimension A.

Width across flats



Pipe outside diameter [mm (in.)]	Width across flats of Flare nut [mm]
6.35 (1/4)	17
9.52 (3/8)	22
12.70 (1/2)	26
15.88 (5/8)	29
19.05 (3/4)	36

SYSTEM DESIGN

■ BENDING PIPES

⚠ CAUTION
• To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 100 mm to 150 mm.
• If the pipe is bent repeatedly at the same place, it will break.

- If pipes are shaped by hand, be careful not to collapse them.
- Do not bend the pipes at an angle of more than 90°.
- When pipes are repeatedly bent or stretched, the material will harden, making it difficult to bend or stretch them any more.
- Do not bend or stretch the pipes more than three times.

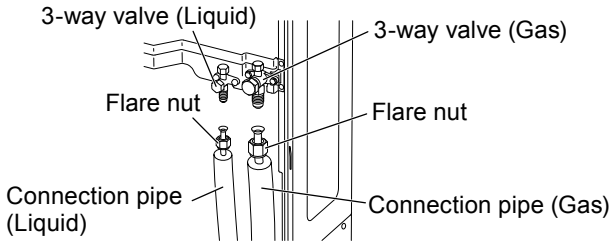
■ PIPE CONNECTION

⚠ CAUTION
• Be sure to install the pipe against the port on the indoor unit and the outdoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.
• Do not remove the flare nut from the outdoor unit pipe until immediately before connecting the connection pipe.
• After installing the piping, make sure that the connection pipes do not touch the compressor or outer panel. If the pipes touch the compressor or outer panel, they will vibrate and produce noise.

(1) Detach the caps and plugs from the pipes.

(2) Center the pipe against the port on the outdoor unit, and then turn the flare nut by hand.

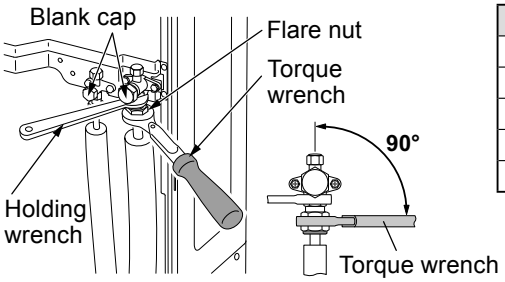
(3) Tighten the flare nut of the connection pipe at the outdoor unit valve connector.



(4) After tightening the flare nut by hand, use a torque wrench to fully tighten it.

⚠ CAUTION
• Hold the torque wrench at its grip, keeping it in a right angle with the pipe, in order to tighten the flare nut correctly.

- Outer panel may be distorted if fastened only with a wrench. Be sure to fix the elementary part with a spanner and fasten with a wrench (refer to below diagram).
- Do not apply force to the blank cap of the valve or hang a wrench, etc., on the cap. It may cause leakage of refrigerant.



Flare nut [mm (in.)]	Tightening torque [N·m (kgf·cm)]
6.35 (1/4) dia.	16 to 18 (160 to 180)
9.52 (3/8) dia.	32 to 42 (320 to 420)
12.70 (1/2) dia.	49 to 61 (490 to 610)
15.88 (5/8) dia.	63 to 75 (630 to 750)
19.05 (3/4) dia.	90 to 110 (900 to 1100)

■ HANDING PRECAUTIONS FOR THE VALVES

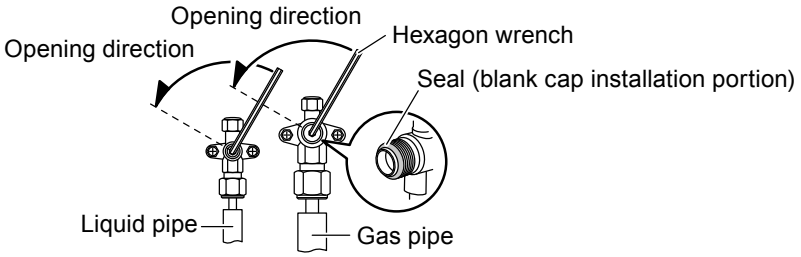
- Mounted part of Blank cap is sealed for protection.
- Fasten blank cap tightly after opening valves.

Table A

Blank cap [mm (in.)]	Tightening torque [N·m (kgf·cm)]
6.35 (1/4)	20 to 25 (200 to 250)
9.52 (3/8)	20 to 25 (200 to 250)
12.70 (1/2	25 to 30 (250 to 300)
15.88 (5/8)	30 to 35 (300 to 350)
19.05 (3/4)	35 to 40 (350 to 400)

Operating the valves

- Use a hexagon wrench (size 4 mm).
- Opening (1) Insert the hexagon wrench into the valve shaft, and turn it counterclockwise.
  (2) Stop turning when the valve shaft can no longer be turned. (Open position)
- Closing (1) Insert the hexagon wrench into the valve shaft, and turn it clockwise.
  (2) Stop turning when the valve shaft can no longer be turned. (Closed position)



SYSTEM DESIGN

2-4. BRANCH PIPES

■ SELECTION PROCEDURE

Type	Kit name	Number of kits	Model (Outdoor unit connection)	Piping diameter kit to outdoor unit (Standard) *1	Piping diameter kit to indoor unit	Number of indoor units
Twin connection	UTP-SX236□	1	36 model	Ø 9.52 (Liquid) Ø 15.88 (Gas)	Ø 6.35 (Liquid) Ø 12.70 (Gas)	2
	UTP-SX254□	1	45 model 54 model	Ø 9.52 (Liquid) Ø 15.88 (Gas)	Ø 9.52 (Liquid) *2 Ø 15.88 (Gas)	2
Triple connection	UTP-SX354□	1	54 model	Ø 9.52 (Liquid) Ø 15.88 (Gas)	Ø 6.35 (Liquid) Ø 12.70 (Gas)	3

*1: For the diameter of the connection piping between the outdoor unit and the branch pipes, please refer to the Installation Manual of the outdoor unit.

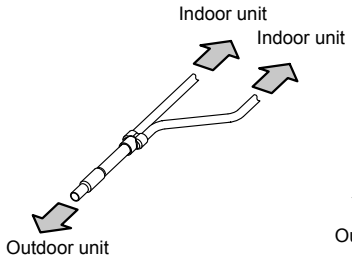
*2: When installing UTP-SX254□, it is necessary to install the adapter on the half union at the liquid pipe of the indoor unit.

■ INSTALLATION WORK

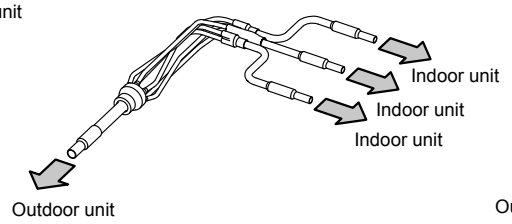
⚠ CAUTION
• Do not mistake the direction of connection.
• Set the piping from the branch pipe to the indoor units to be of the same length. (Max. difference: 8m)
• Shorten the length of the piping after branching as much as possible. (Max. length: 20m)

(1) Check the direction of connection.

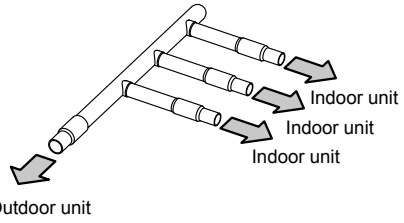
Twin connection type



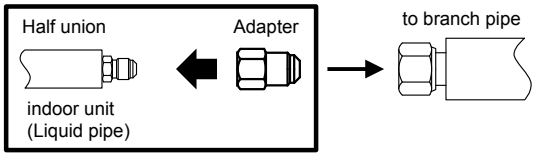
Triple connection type (Liquid)



Triple connection type (Gas)



(2) When installing UTP-SX254□, install the adapter on the half union at the liquid pipe of the indoor unit.



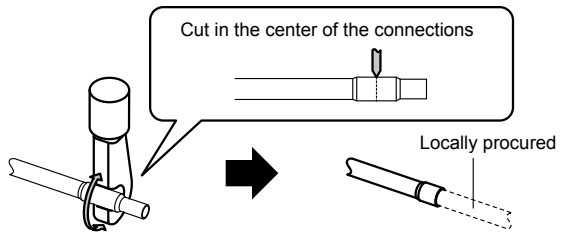
Adapter tightening torque

Adapter type	Tightening torque [N•m] (kgf•cm)
Ø6.35 → Ø9.52	14 to 18 (140 to 180)

- When using the Adapter, be careful not to overtighten the nut, or the smaller pipe may be damaged.
- Use appropriate wrenches to avoid damaging the connection thread by overtightening the flare nut.
- Apply wrenches on both of flare nut (local part), and Adapter to tighten them.

SYSTEM DESIGN

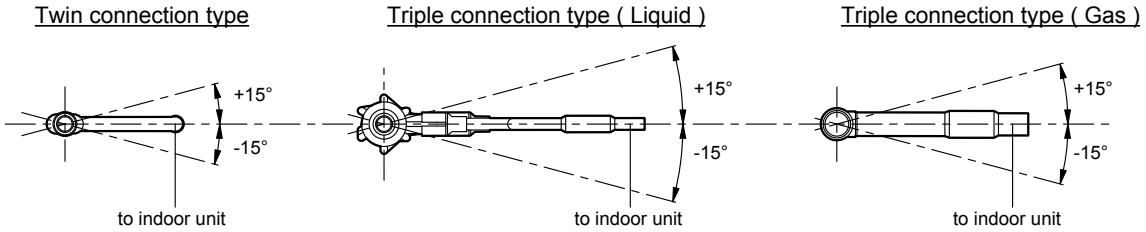
(3) If the diameter of the connection piping is too large, use a pipe cutter to cut as shown below.



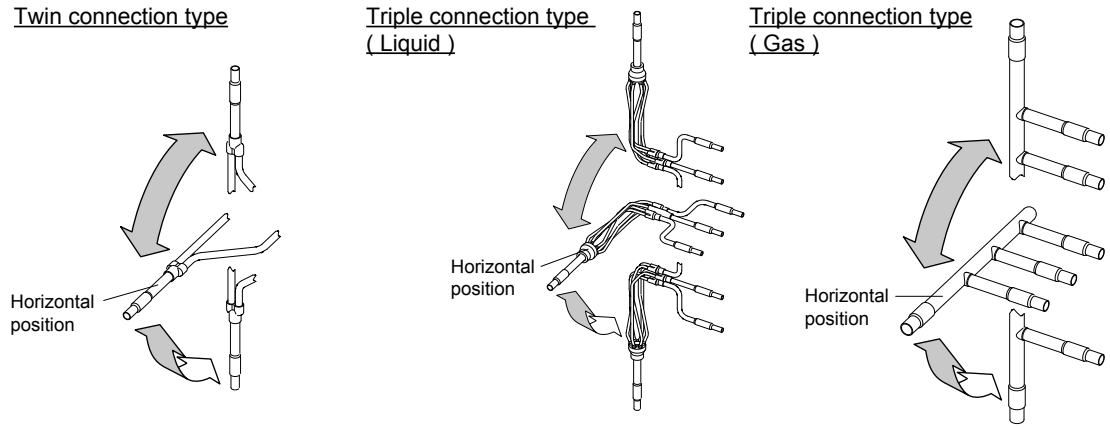
- Always use a pipe cutter.
- After cutting, remove the burr and clean the cut section.

(4) Positioning of branch pipes

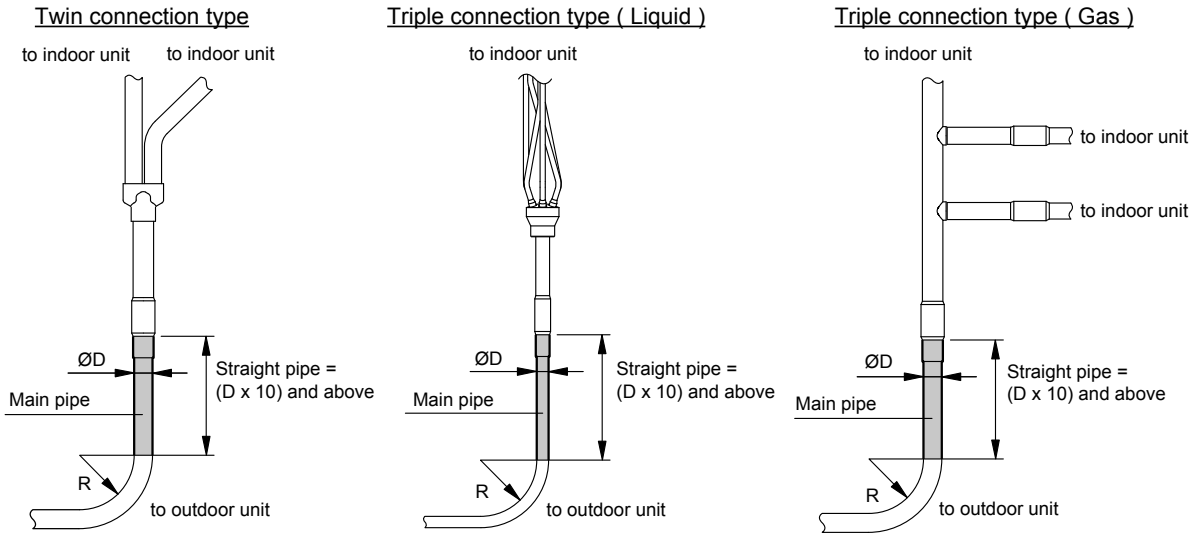
- If it is placed horizontally, keep it within ± 15°.
  Otherwise, it will not separate the refrigerant evenly, causing a reduction in performance.



- Place the branch pipe in a horizontal position as far as possible. Only place the branch pipe as shown below during unavoidable circumstances.



- When connecting the main piping, do not bend it near the connection section.
  If the main pipe must be bent due to unavoidable circumstances, ensure that the linear section is 10 times or more than the diameter of the connection piping.



SYSTEM DESIGN

(5) Welding the piping

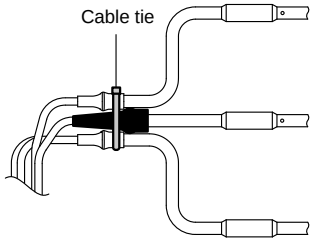
• Check that the connection piping is securely inserted into the branch pipe before welding.

⚠ CAUTION
• During piping work, apply nitrogen gas while brazing the pipes. If pipes are brazed without applying nitrogen gas, it will create a large amount of oxidation film, which will cause a critical malfunction.
• To prevent moisture or foreign matter from entering during work, do not leave the piping open.
• Refer to the Installation Manual supplied with the outdoor unit for sealing test evacuation procedures.

• Do not weld the rubber on the branch pipe. (UTP-SX354□ only)

(6) Installing Cable tie (UTP-SX354□ only)

• Install the Cable tie as shown below.

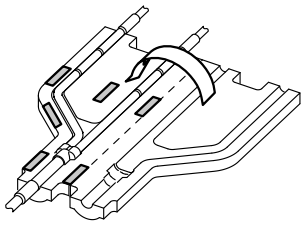


• The installation position of the Cable tie is shown on the left.
• After installing the Cable tie, cut away the excess portion neatly.

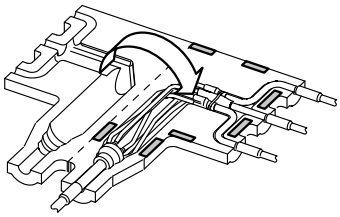
(7) After brazing the pipes, use the supplied heat insulation to insulate them.

• Remove the protective sheet from the double-stick tape that is affixed to the heat insulation.

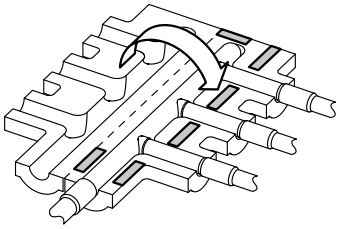
Twin connection type



Triple connection type (Liquid)

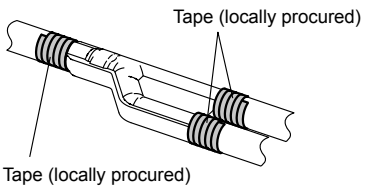


Triple connection type (Gas)

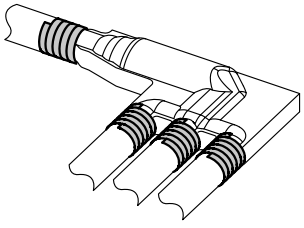


• Use tape (locally procured) to seal the seam so that there will be no gap at the junction between the aforementioned heat insulation and the heat insulation on the local piping.

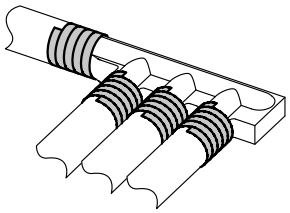
Twin connection type



Triple connection type (Liquid)

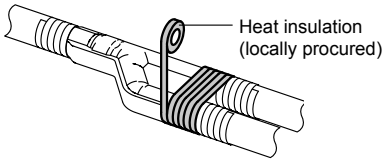


Triple connection type (Gas)

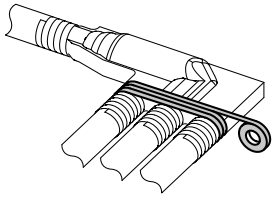


⚠ CAUTION
• Be sure to install the heat insulation on liquid pipes and gas pipes. Unless they are thermally insulated, water condensation can cause accidents or reduction in performance.
• After installing the heat insulation, if you worry about possible condensation due to the high humidity of installation position, please use locally procured heat insulation to reinforce insulation.

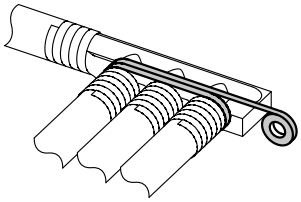
Twin connection type



Triple connection type (Liquid)



Triple connection type (Gas)



SYSTEM DESIGN

SYSTEM DESIGN

3. WIRING DESIGN

3-1. ELECTRICAL WIRING

■ PRECAUTION FOR ELECTRICAL WIRING

Regulation on wire diameter and selecting circuit braker size differ from locality.

Install in accordance with local rules and regulations.

⚠ WARNING
• Wiring connections must be performed by a qualified person in accordance with the specifications. The voltage rating for this product is 400 V at 50 Hz. It should be operated within the range of 342 to 456 V.
• Before connecting the wires, make sure the power supply is OFF.
• Never touch electrical components immediately after the power supply has been turned off. Electrical shock may occur. After turning off the power, always wait 10 minutes or more before touching electrical components.
• Use a dedicated power supply circuit. Insufficient power capacity in the electrical circuit or improper wiring may cause electric shock or fire.
• Install a breaker at the power supply for each outdoor unit. Improper breaker selection can cause electric shock or fire.
• Install a leakage circuit breaker in accordance with the related laws and regulations. An improperly installed electrical box cover can cause serious accidents such as electric shock or fire through exposure to dust or water.
• A circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3 mm between the contacts of each pole.
• Use designated cables and power cables. Improper use may cause electric shock or fire by poor connection, insufficient insulation, or over current.
• Do not modify power cable, use extension cable or branch wiring. Improper use may cause electric shock or fire by poor connection, insufficient insulation or over current.
• Connect the connector cable securely to the terminal. Check no mechanical force bears on the cables connected to the terminals. Faulty installation can cause a fire.
• Use crimp-type terminals and tighten the terminal screws to the specified torques, otherwise, abnormal overheating may be produced and possibly cause serious damage inside the unit.
• Make sure to secure the insulation portion of the connector cable with the cable clamp. Damaged insulation can cause a short circuit.
• Fix cables so that cables do not make contact with the pipes (especially on high pressure side). Do not make power supply cable and transmission cable come in contact with valves (Gas).
• Never install a power factor improvement condenser. Instead of improving the power factor, the condenser may overheat.
• Be sure to perform the grounding work. Do not connect grounding wires to a gas pipe, water pipe, lightning rod or grounding wire for a telephone. •Connection to a gas pipe may cause a fire or explosion if gas leaks. •Connection to a water pipe is not an effective grounding method if PVC pipe is used. •Connection to the grounding wire of a telephone or to a lightning rod may cause a dangerously abnormal rise in the electrical potential if lightning strikes. •Improper grounding work can cause electric shocks.
• Securely install the electrical box cover on the unit. An improperly installed service panel can cause serious accidents such as electric shock or fire through exposure to dust or water.

SYSTEM DESIGN

⚠ CAUTION
• The primary power supply capacity is for the air conditioner itself, and does not include the concurrent use of other devices.
• Do not start operation until the refrigerant is charged completely. The compressor will fail if it is operated before the refrigerant piping charging is complete.
• Transmission cable between indoor unit and outdoor unit is 230 V.
• Be sure not to remove thermistor sensor etc. from power wiring and connection wiring. Compressor may fail if operated while removed.
• Start wiring work after closing branch switch and over current breaker.
• Use an earth leakage breaker that is capable of handling high frequencies. Because the outdoor unit is inverter controlled, a high-frequency earth leakage breaker is necessary to prevent a malfunction of the breaker itself.
• When using an earth leakage breaker that has been designed solely for ground fault protection, be sure to install a fuse-equipped switch or circuit breaker.
• Do not connect the AC power supply to the transmission line terminal board. Improper wiring can damage the entire system.
• Do not use crossover power supply wiring for the outdoor unit.
• If the temperature surrounding the breaker is too high, the amperage at which the breaker cuts out may decrease.

SYSTEM DESIGN

3-2. POWER SUPPLY CABLE WIRING

■ POWER SUPPLY CABLE SPECIFICATIONS

Use a separate power supply for the outdoor unit and indoor unit.

OUTDOOR UNIT

● Breaker and wiring specifications

Breaker capacity (A)	Power supply cable
	Conductor size (mm²)
16	2.5(Min.)

- Use confirmed cable with type 245 IEC 57.
- Perform all electrical work according to the standard.
- Install a circuit breaker with a contact gap of at least 3 mm in all poles nearby the units. (Both indoor units and outdoor units)
- Install the circuit breaker nearby the units.
- Wiring size must comply with the applicable local and national code.

INDOOR UNITS

● Single system

Electrical requirement

Connection cable (mm²)
1.5(Min.)

- Use conformed cable with Type 245 IEC57.
- Perform all electrical work according to the standard.
- Install circuit breakers, which have the terminal spacing of more than 3 mm, in a place of near the indoor unit and outdoor unit.

● Simultaneous multi system

Electrical requirement

	Power supply cable Transmission cable	Earth cable
Conductor size (mm²)	1.5(Min.)	1.5

	Conductor size (mm²)	Max length (m)
Bus wire	0.33(Min.)	500*

*: This length shall be the total extended length in the system of the group. (Total length of bus wire and remote controller cable.)

- Use conformed cable with Type 245 IEC57. (Power supply cable or transmission cable)
- Perform all electrical work according to the standard.
- Install circuit breakers, which have the terminal spacing of more than 3 mm, in a place of near the indoor unit and outdoor unit.
- Wiring size must comply with the applicable local and national code.

WIRED REMOTE CONTROLLER

Electrical requirement

	Conductor cable (mm²)	Max length (m)	Wire type
Remote controller cable	0.33	500*	Use sheathed PVC cable, Polar 3 core

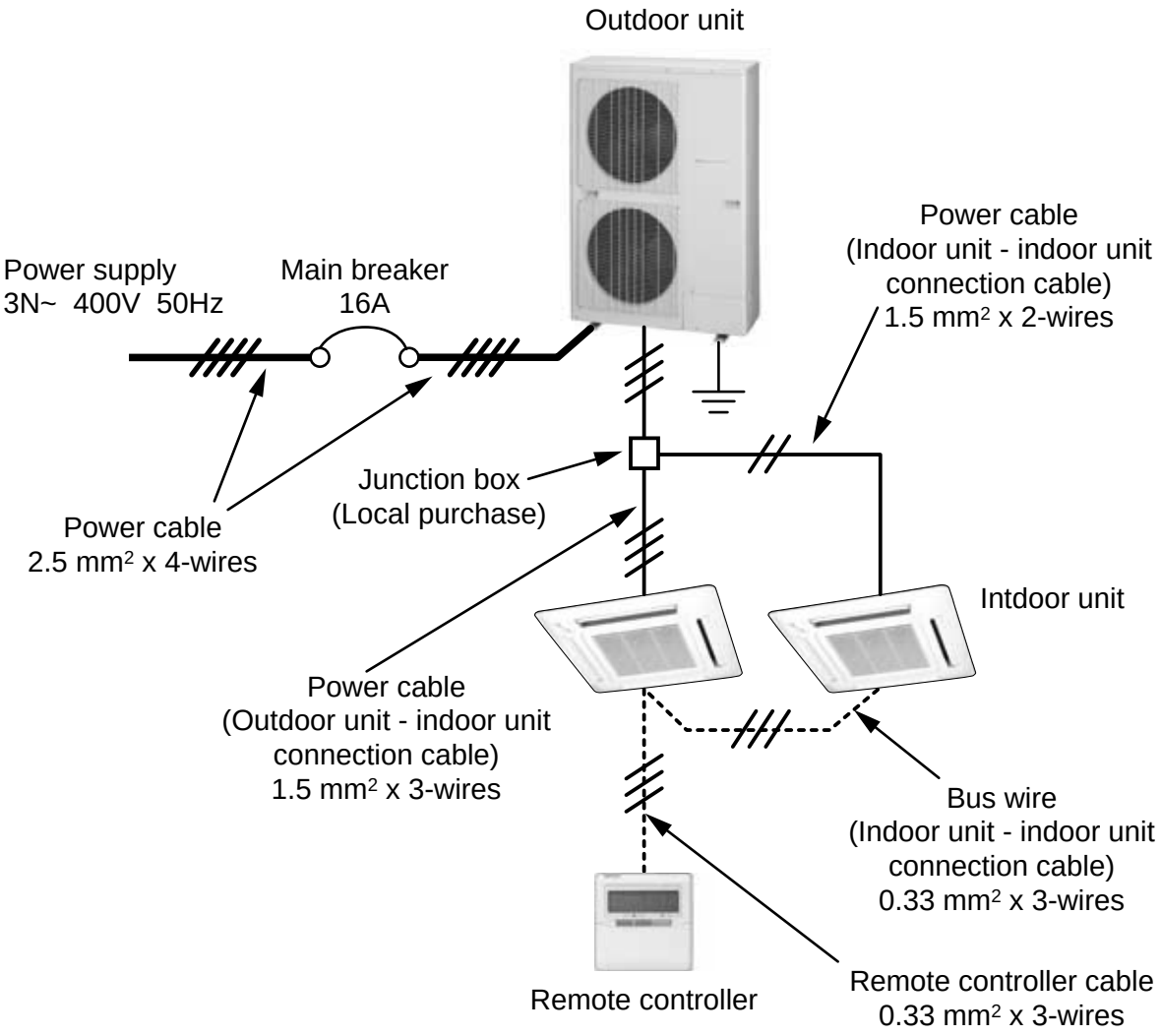
*: This length shall be the total extended length in the system of the group. (Total length of bus wire and remote controller cable.)

- Use conformed cable with Type 245 IEC57.
- Perform all electrical work according to the standard.

SYSTEM DESIGN

⚠ CAUTION
• Be sure to execute the electrical work according to the Laws of each country and the Installation Instructions. In addition, be sure to set as exclusive line and use the rated voltage and circuit breaker.
• Above "Conductor size" and "Breaker capacity" are minimum value.
• Transmission cable between indoor unit and outdoor unit is 230 V.
• Regulation of conductor size and circuit breaker differs from each locality, please refer in accordance with local rules.
• Start wiring work after closing branch switch and over current breaker.
• Specific wiring requirement should be applied Type 245 IEC 57 or equivalent.
• To prevent the electrical noise malufunction and hazards from insulation failure, the unit should be connected to ground.
• A disconnect switch may be required for ease of maintenance in accordance with local regulation for each unit. Please check the local rules and regulations. Make the wire length between disconnect switch and unit terminal as short as possible.
• All field wiring and components must be provided by a licensed electrician.
• Use copper conductors only.

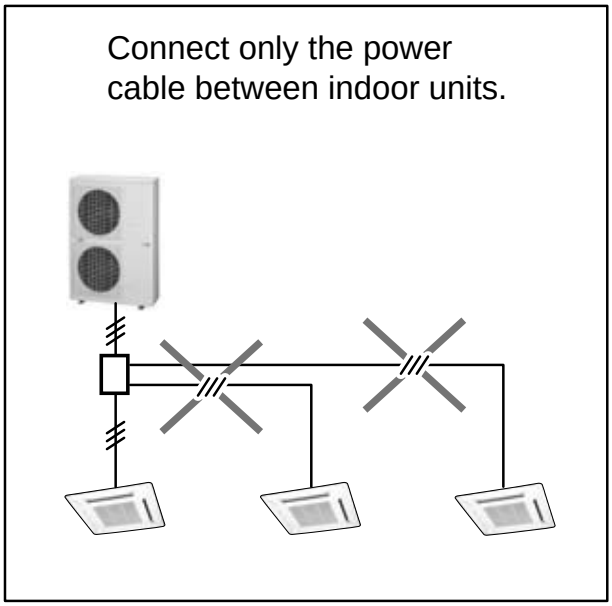
■ POWER SUPPLY CABLE WIRING

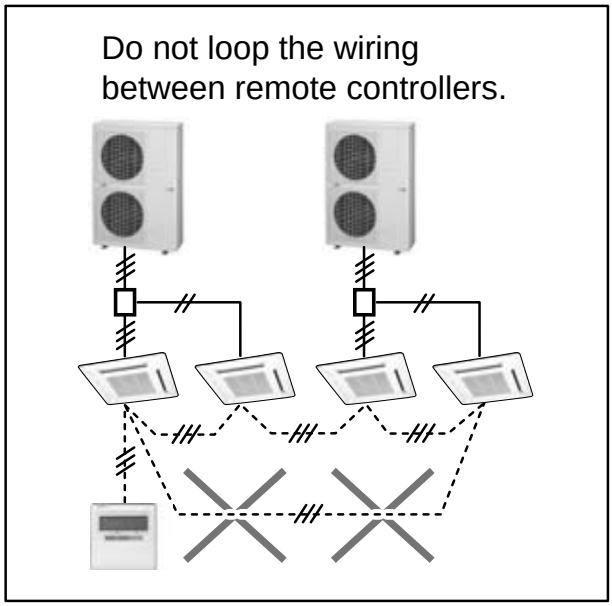


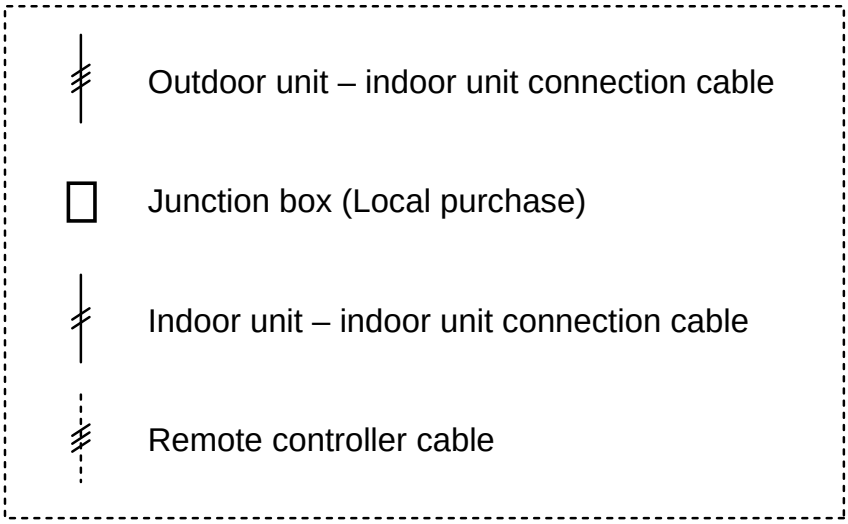
SYSTEM DESIGN

■ WIRING CONNECTION RULES

- Connect serial wire only to the primary unit.
  (If serial wire was connected from primary unit to secondary unit, the air conditioner will not operate.)
- Do not loop the wiring between remote controllers.
  (When looped, the air conditioner will not operate.)



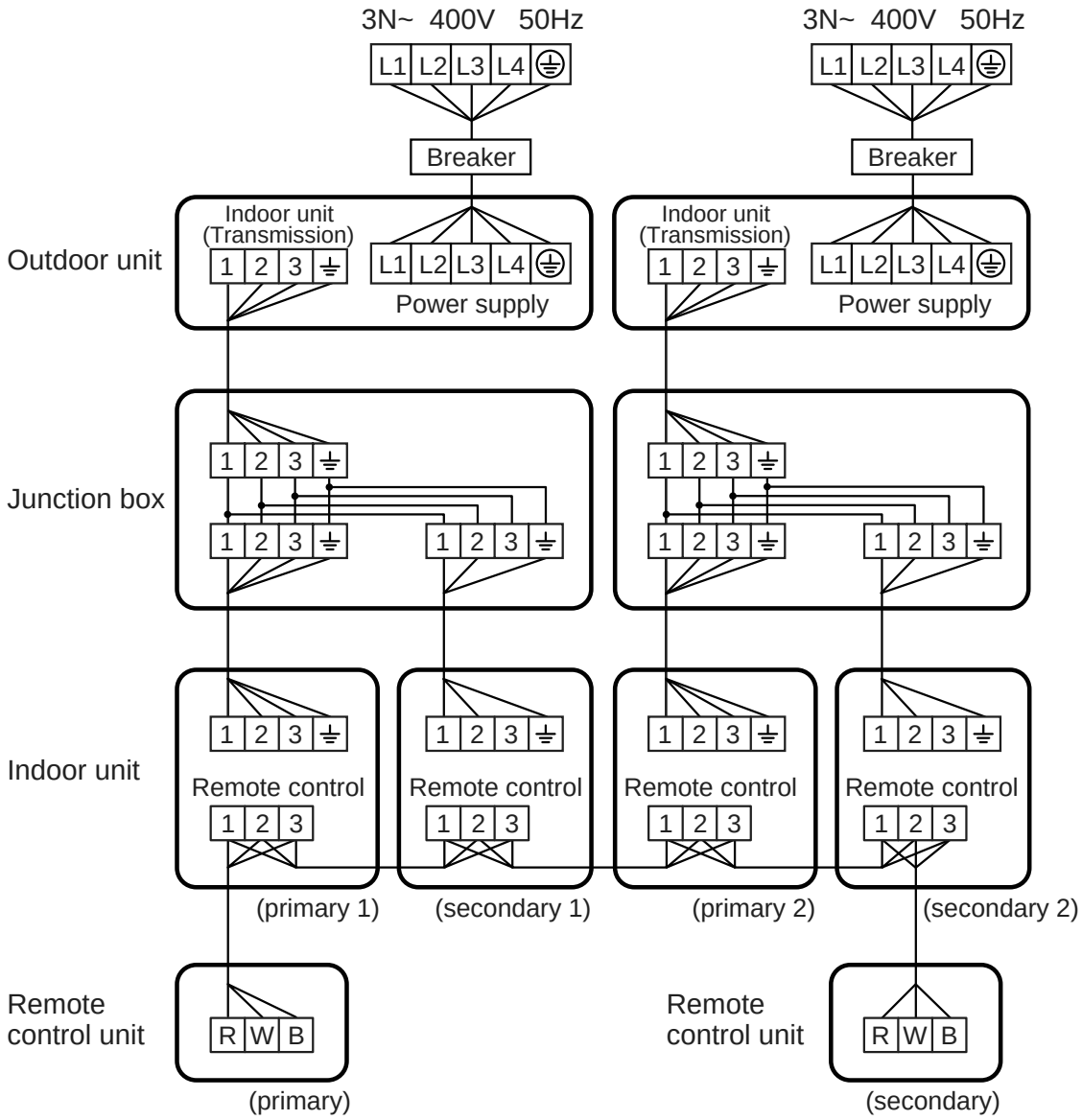



Outdoor unit – indoor unit connection cable
Junction box (Local purchase)
Indoor unit – indoor unit connection cable
Remote controller cable

SYSTEM DESIGN

■ WIRING METHOD

The wiring method conforms to the following diagram.



SYSTEM DESIGN

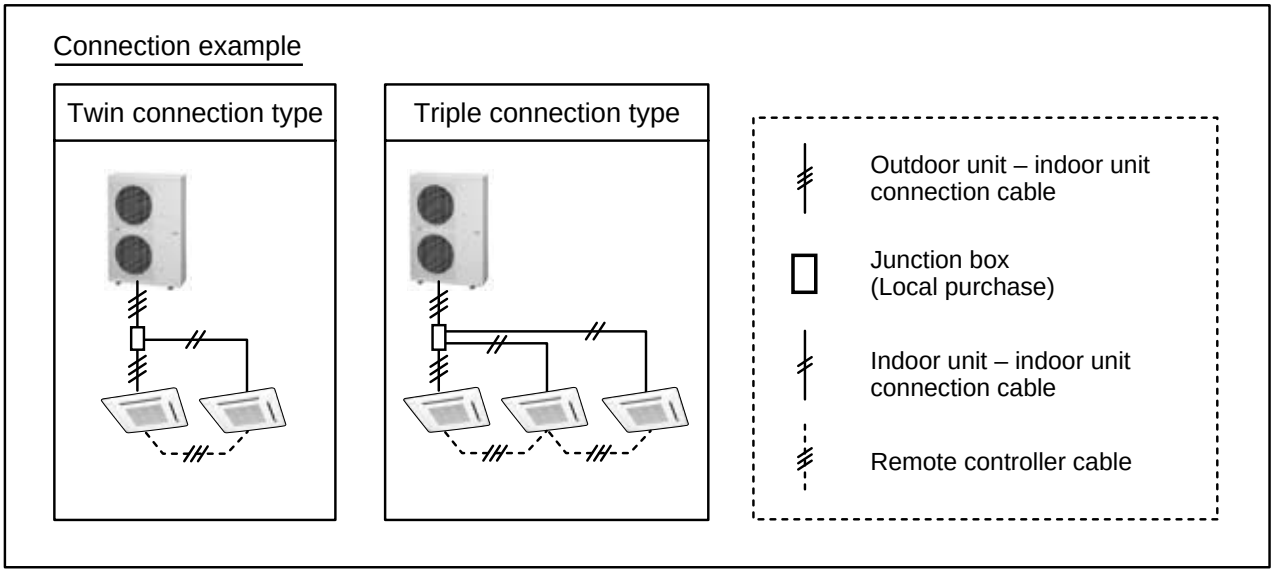
■ RECOMMENDED WIRING CONNECTION

● Simultaneous multi system

Up to 3 indoor units can be connected to one outdoor unit.

Operation of all indoor units is the same.

The simultaneous multi system is effective for anomalistic floors and wide floors.


Connection example
Twin connection type
Triple connection type
Outdoor unit – indoor unit connection cable
Junction box (Local purchase)
Indoor unit – indoor unit connection cable
Remote controller cable

SYSTEM DESIGN

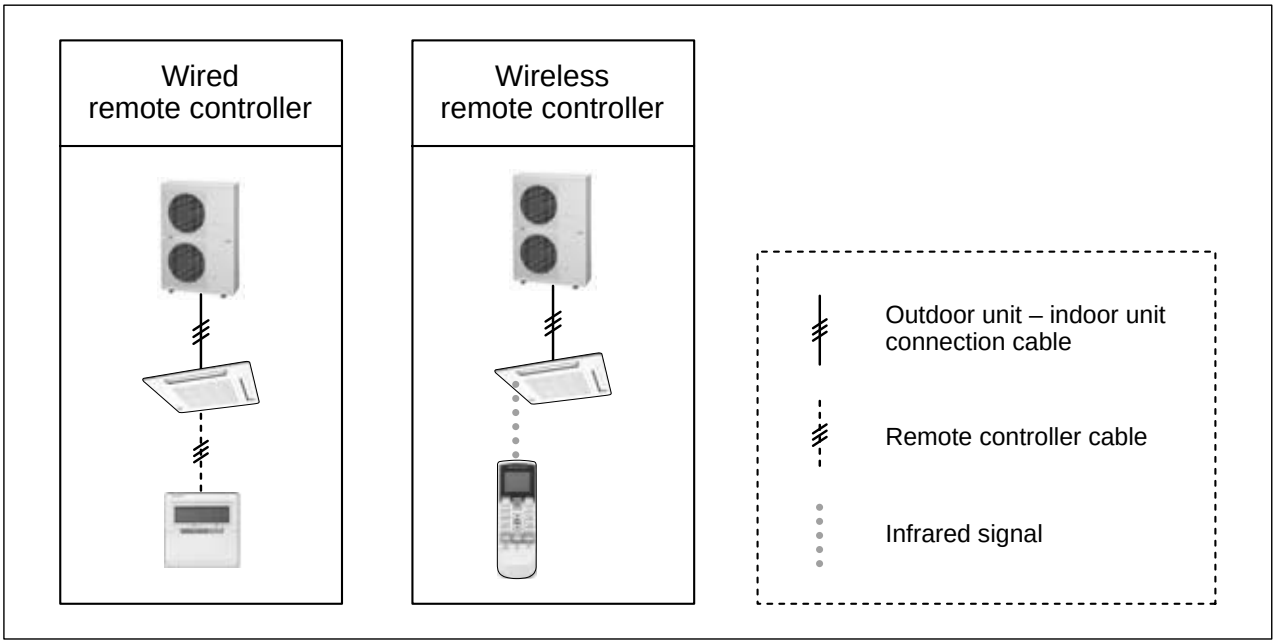
3-3. CONTROL PATTERNS

■ 1-REMOTE CONTROLLER CONTROL

This is the most basic system. Wired type or wireless type remote controller can be selected.

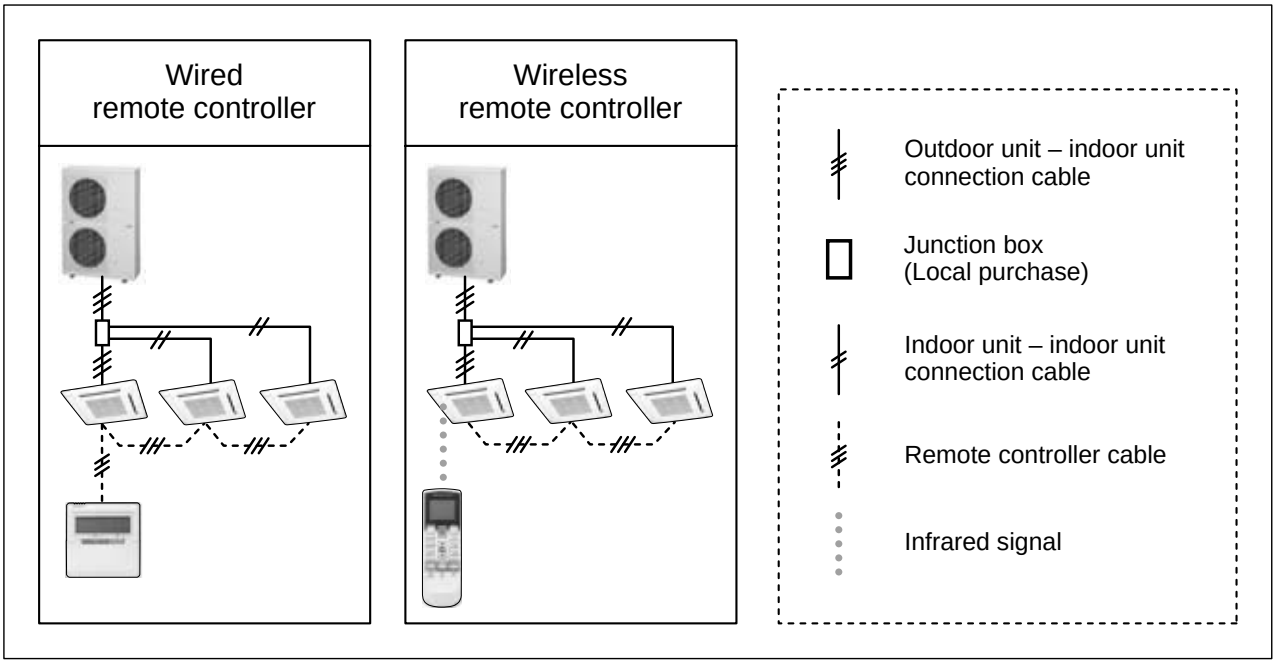
● Connection examples

Single system



*When using a wireless type remote controller, install IR Receiver unit to the indoor units.
(Cassette type, Duct type)

Simultaneous multi system



*When using a wireless type remote controller, install IR Receiver unit to the indoor units.
(Slim duct type, Duct type)

*In simultaneous multi connection, the timer and 10°C HEAT functions by using the wireless remote controller cannot be used.

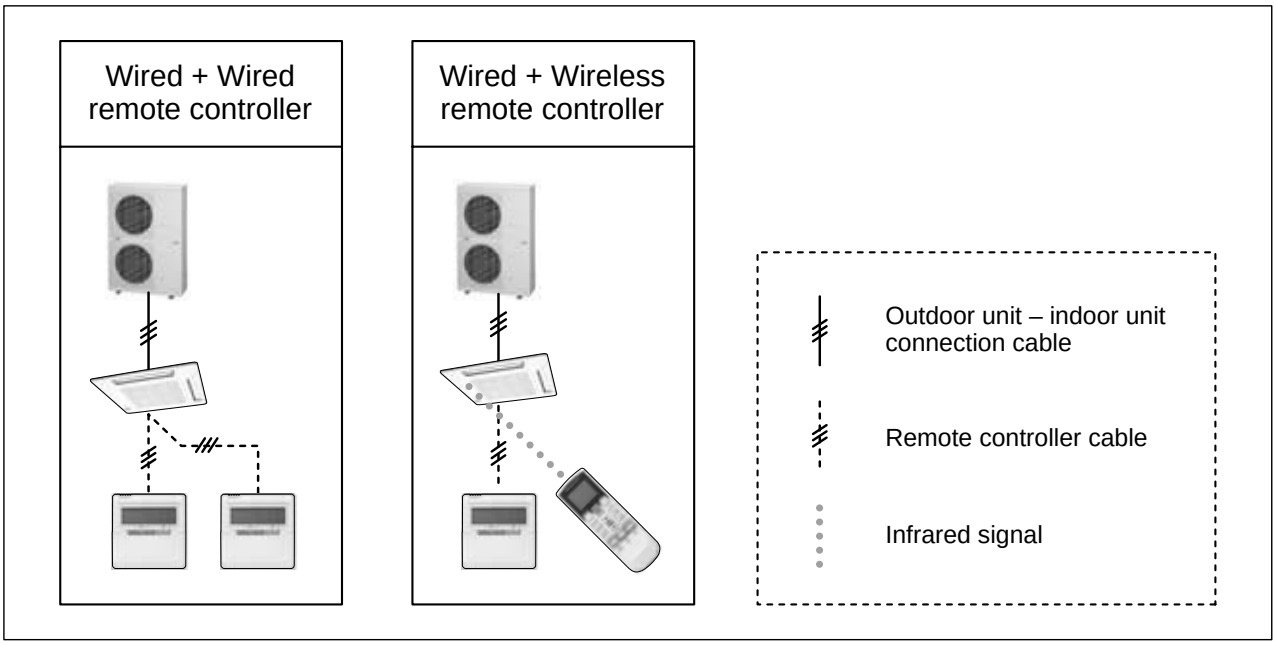
SYSTEM DESIGN

■ 2-REMOTE CONTROLLERS CONTROL

Control locally and from a remote point is possible using 2-remote controllers.

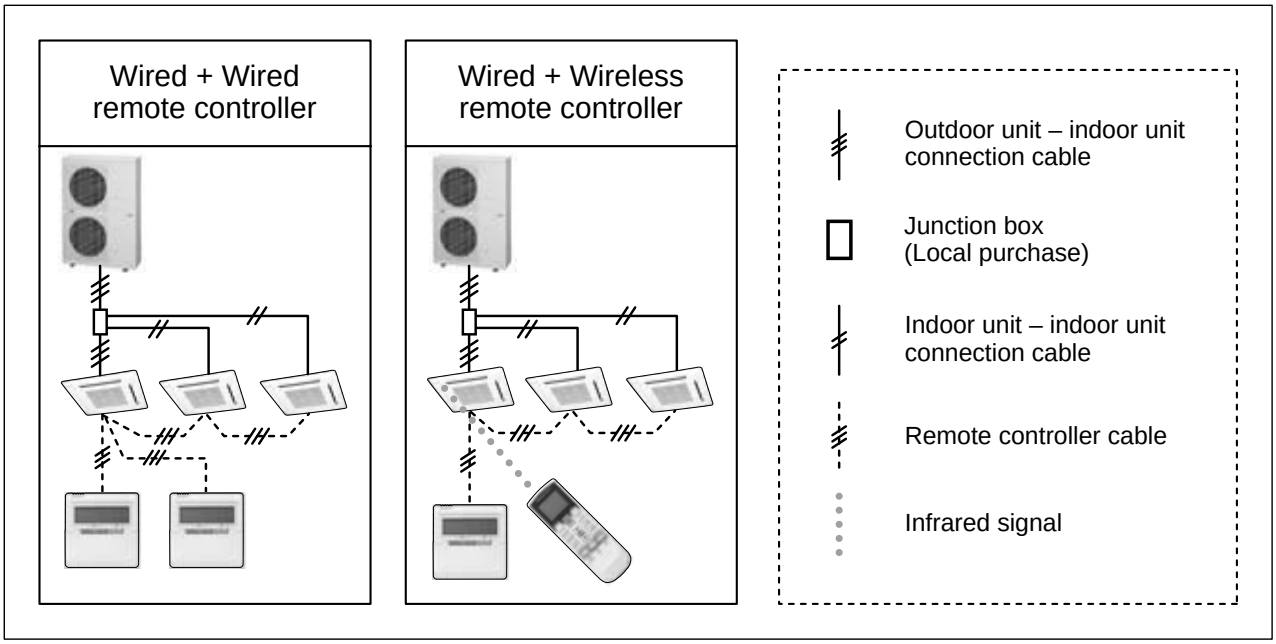
● Connection examples

Single system


Wired + Wired remote controller
Wired + Wireless remote controller
Outdoor unit – indoor unit connection cable
Remote controller cable
Infrared signal

*For 2 wired-type remote controllers, specify a primary and a secondary remote controller.
*The timer and 10°C HEAT (Wireless R.C. only) functions of the remote controller specified as the secondary cannot be used.
*When using a wireless type remote controller, install IR Receiver unit to the indoor units.
(Cassette type, Duct type)

Simultaneous multi system


Wired + Wired remote controller
Wired + Wireless remote controller
Outdoor unit – indoor unit connection cable
Junction box (Local purchase)
Indoor unit – indoor unit connection cable
Remote controller cable
Infrared signal

*For 2 wired-type remote controllers, specify a primary and a secondary remote controller.
*The timer and 10°C HEAT (Wireless R.C. only) functions of the remote controller specified as the secondary cannot be used.
*In simultaneous multi connection, the timer and 10°C HEAT functions by using the wireless remote controller cannot be used.
*When using a wireless type remote controller, install IR Receiver unit to the indoor units.
(Slim duct type, Duct type)

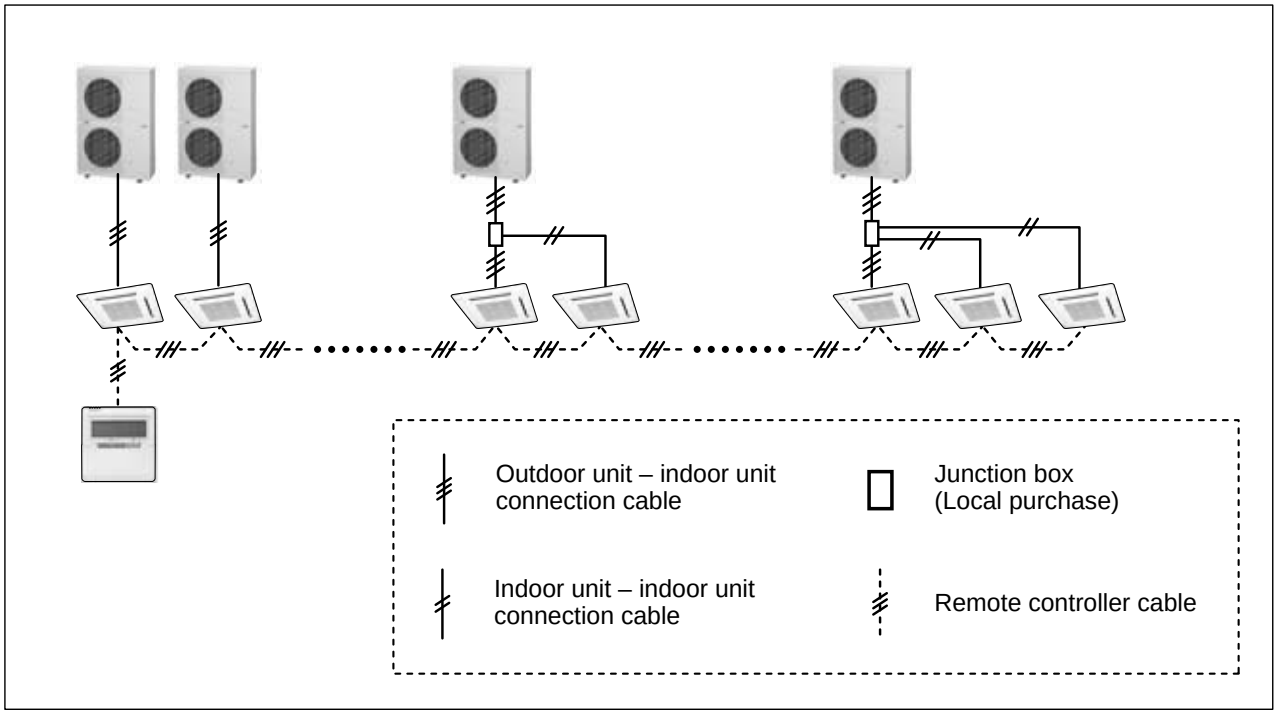
SYSTEM DESIGN

■ REMOTE CONTROLLER GROUP CONTROL

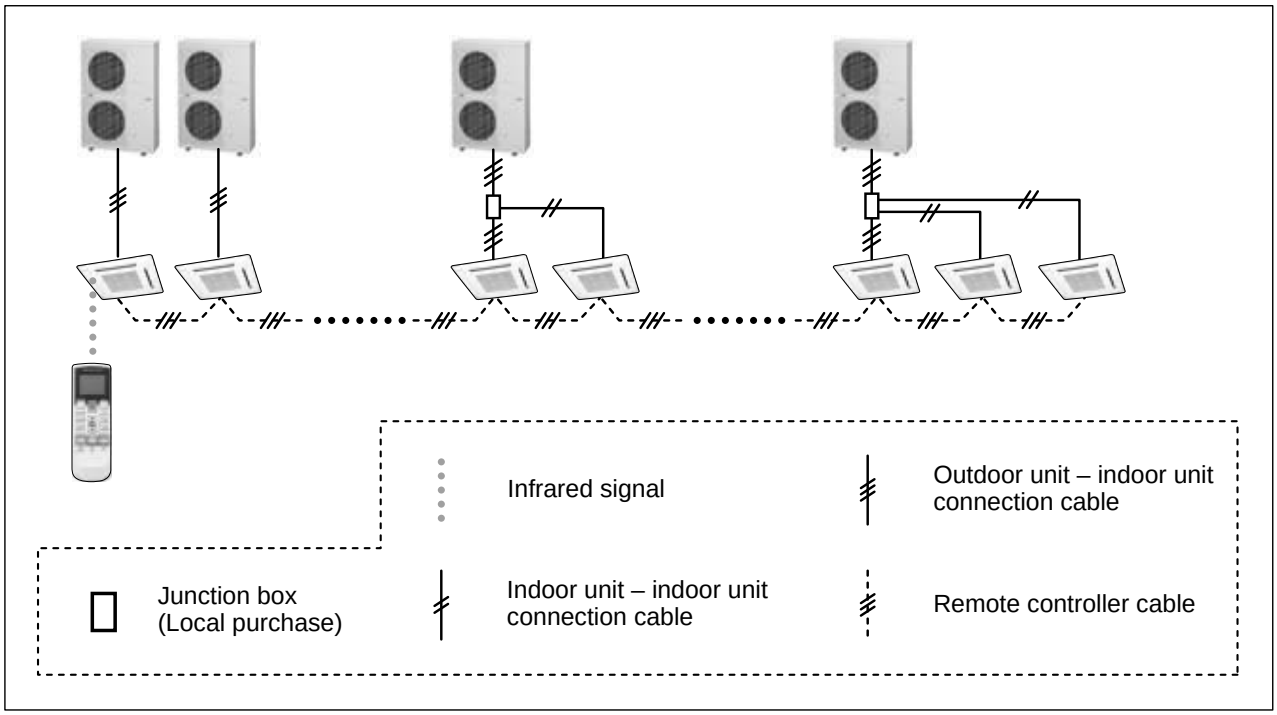
1 or 2-remote controllers can simultaneously control up to 16 indoor units.

● Connection examples

Wired remote controller type


Outdoor unit – indoor unit connection cable
Junction box (Local purchase)
Indoor unit – indoor unit connection cable
Remote controller cable

Wireless remote controller type


Infrared signal
Outdoor unit – indoor unit connection cable
Junction box (Local purchase)
Indoor unit – indoor unit connection cable
Remote controller cable

*When using a wireless type remote controller, install IR Receiver unit to the indoor units. (Slim duct type, Duct type)

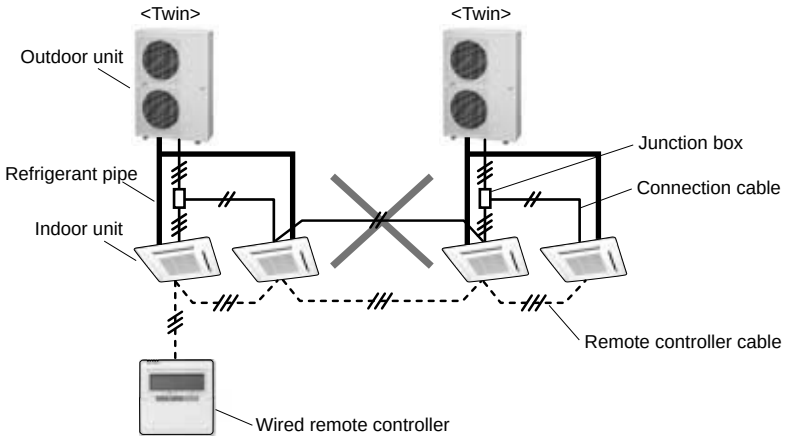
*In simultaneous multi connection, the timer and 10°C HEAT functions by using the wireless remote controller cannot be used.

*In the group connection of different models, the functions which can be set by using the wired remote controller are limited.

SYSTEM DESIGN

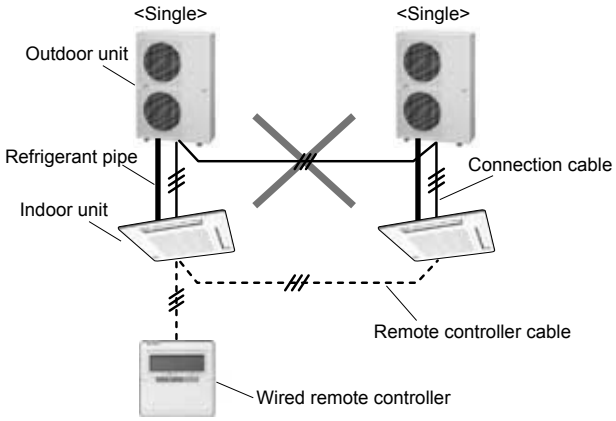
3-4. CONNECTION EXAMPLES

■ EXAMPLE 1 (Prohibited)



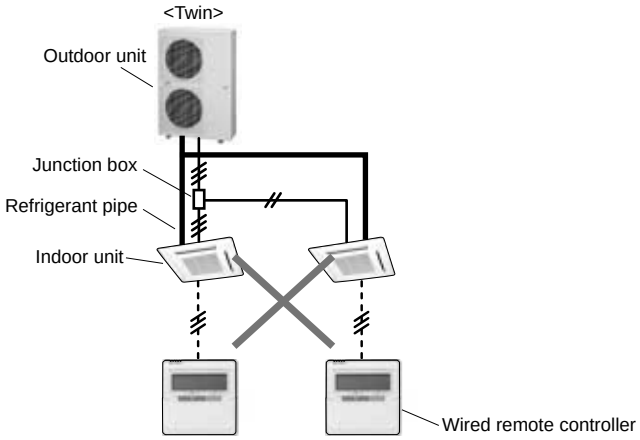
Note : Do not connect between indoor units crossing over a refrigerant circuit.

■ EXAMPLE 2 (Prohibited)



Note : Do not connect between outdoor units crossing.

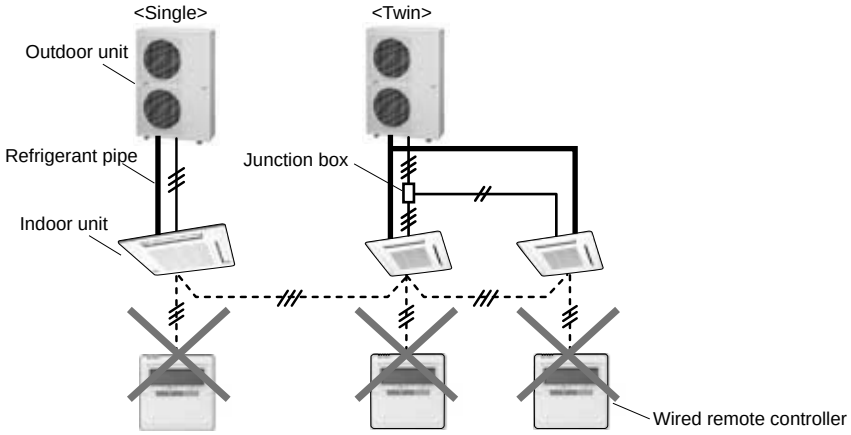
■ EXAMPLE 3 (Prohibited)



Note : When connecting more than 2 indoor units in same refrigerant circuit, the remote controller cable must be connected between indoor units.

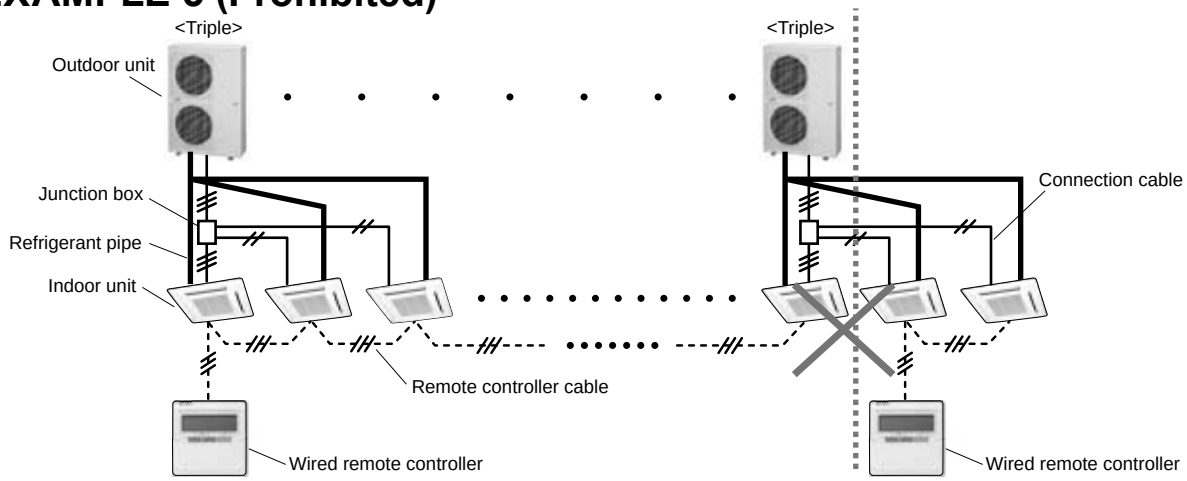
SYSTEM DESIGN

■ EXAMPLE 4 (Prohibited)



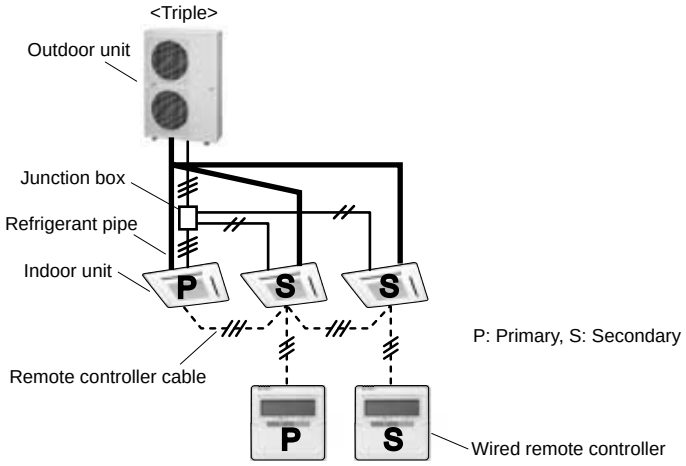
Note : Do not connect 3 or more remote controllers in the same remote controller group.

■ EXAMPLE 5 (Prohibited)



Note : Do not separate the remote controller group in the same refrigerant circuit.

■ EXAMPLE 6 (OK)



Note : Maximum of 2 remote controllers can be connected in the same remote controller group.
Also, a remote controller can be connected to any indoor unit.

SYSTEM DESIGN

4. SYSTEM SETTING

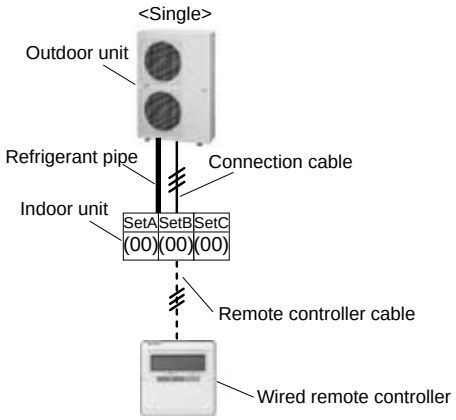
4-1. INDOOR UNIT SETTING

		Indoor unit			
	Setting	Single	Simultaneous Multi	Setting range	Setting method
Set A	Indoor unit Primary / Secondary	-	○	"00" or "01"	Refer to 6-6. (Function number: 51)
Set B	Refrigerant circuit address	△	△	"00" to "15"	Refer to 6-6. (Function number: 02)
Set C	Remote controller address	△	○	"00" to "15" *1	Refer to 6-2. (DIP SW setting)

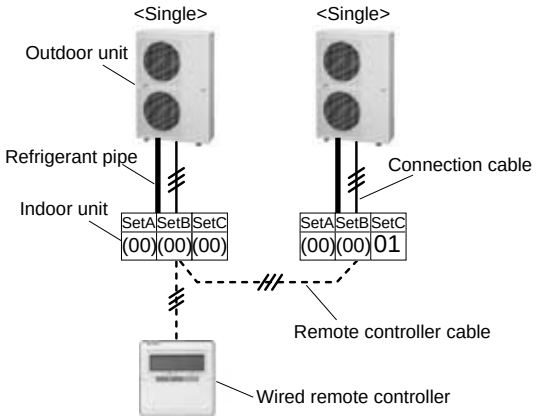
○: Setting is required.
△: By a case, setting is required.
- : Setting is not required.
*1 : Set the remote controller address in the order of 00, 01, 02,…, 15.(Blank is not allowed)

■ SINGLE TYPE

● Connection example 1

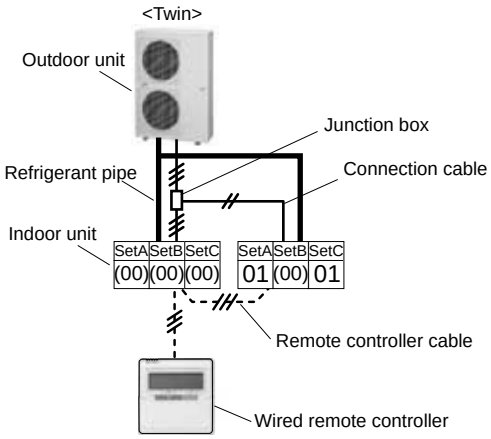


● Connection example 2

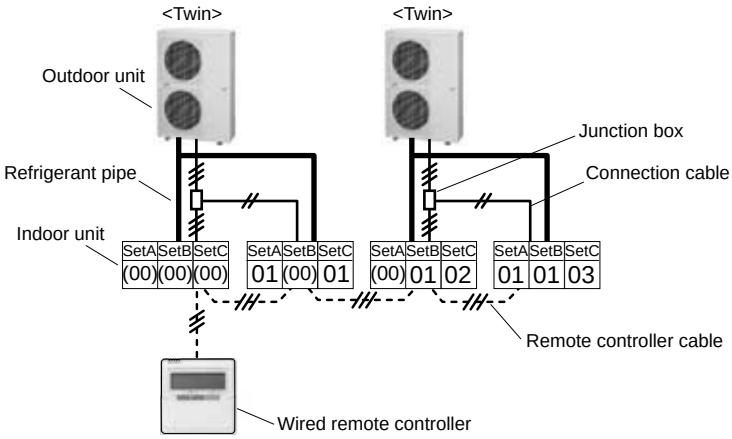


■ TWIN TYPE

● Connection example 3



● Connection example 4

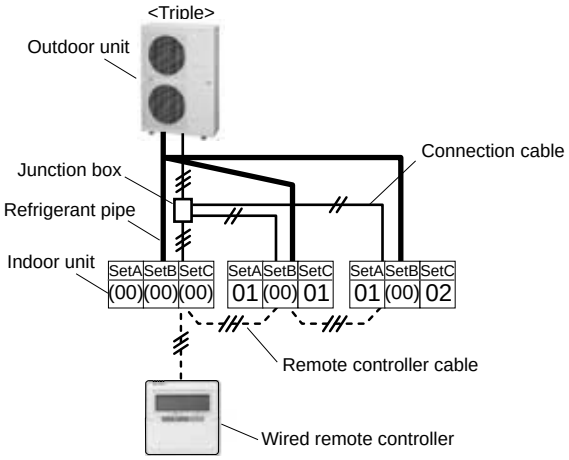


Note : (00) is factory setting.

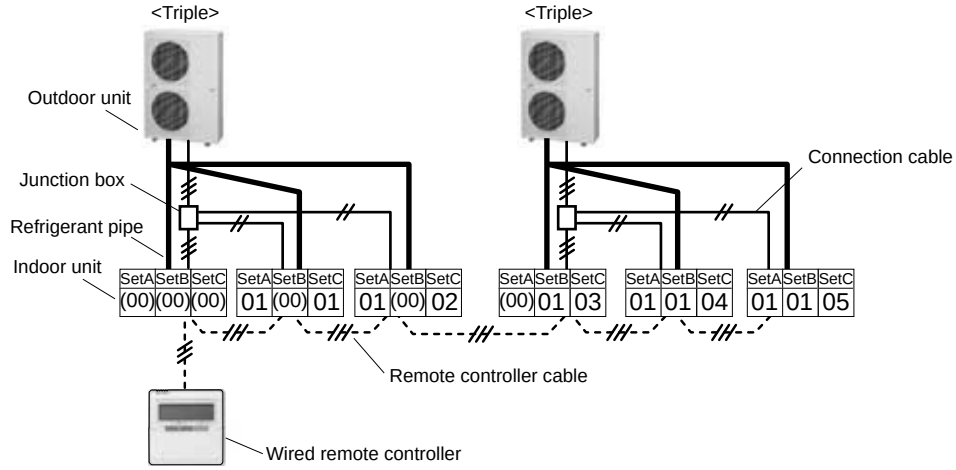
SYSTEM DESIGN

■ TRIPLE TYPE

● Connection example 5

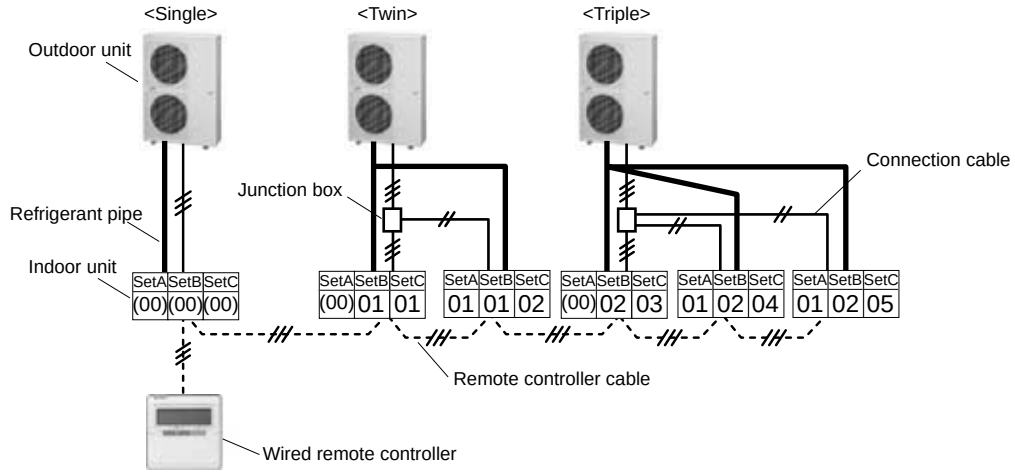


● Connection example 6



■ MIXED

● Connection example 7



Note : (00) is factory setting.

SYSTEM DESIGN

5. EXTERNAL INPUT & OUTPUT

5-1. OUTDOOR UNIT

Input	Output	Connector	Remarks
LOW NOISE MODE	—	CN19	See external input/output settings for details.
PEAK CUT MODE	—	CN19	
—	ERROR STATUS	CN18	
—	COMPRESSOR STATUS	CN18	

5-1-1. EXTERNAL INPUT

ON/OFF of the "Low noise mode" and "Peak cut mode" functions can be specified by external signal.

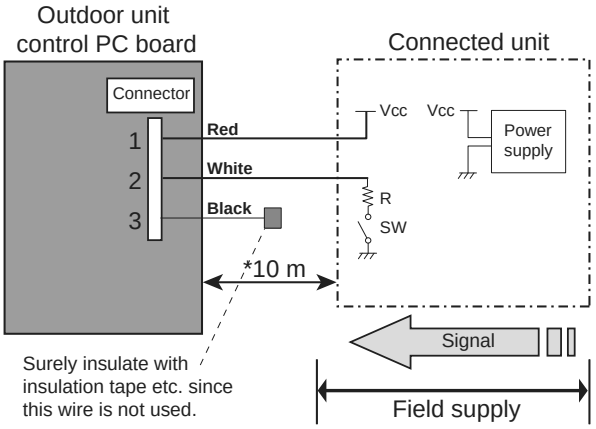
■ LOW NOISE MODE

- The following reduces the operating sound of the outdoor unit from the normal sound. The air conditioner is set to the "Low noise mode" by applying the contact input of a commercial timer or ON/OFF switch to a connector on the outdoor control PC board.

* Performance may drop depending on the outside air temperature condition, etc.

● Circuit diagram example

- Use the following parts and construct a circuit like that shown above.



1) Power supply
- ●Voltage (Chart sign=Vcc) : DC 5V to 24V
- ●The current capacity : About 100mA

2) Switch (Chart sign=SW)
- ●Toggle switch or Rocker switch, etc : Switch which maintains the states.
- ●Prepare switches which are enough capable for DC 10mA current or more

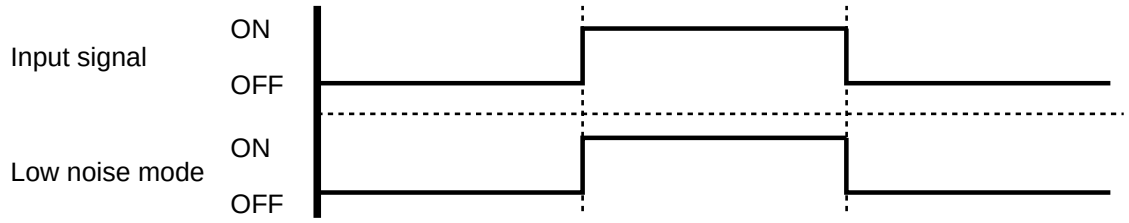
3) Resistance (Chart sign=R)
- ●Adjust the resistance for current to about DC 10mA

(Example)
- ●In case of Vcc=DC 5V : Rated resistance value 470Ω 1/4W
- ●In case of Vcc=DC 12V : Rated resistance value 1kΩ 1/4W
- ●In case of Vcc=DC 24V : Rated resistance value 2.2kΩ 1/4W

* Make the distance from the PC board to the connected unit within 10 m.

- Input signal···ON : Low noise mode / OFF : Normal operation

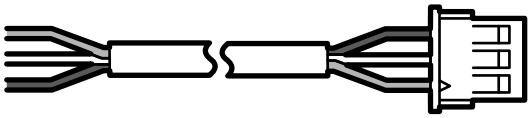
* Set the "Low noise mode" type by "Push switch" on the outdoor control PC board.



● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZXZ2

Wire (External input) : Red / White / Black

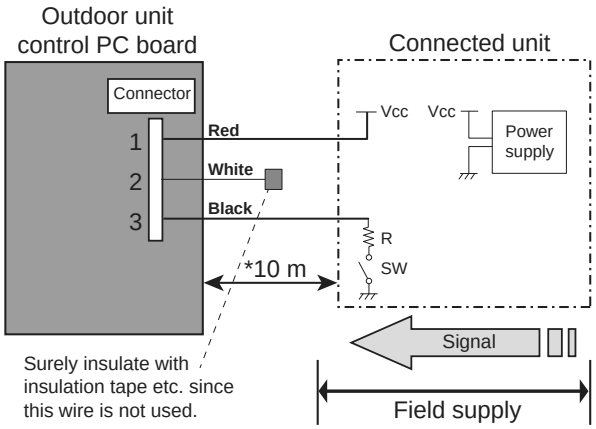


SYSTEM DESIGN

■ PEAK CUT MODE

• Operation that suppressed the current value can be performed by means of the following on-site work. The air conditioner is set to the Peak cut mode by applying the contact input of a commercial ON/OFF switch to a connector on the outdoor control PC board.

● Circuit diagram example



1) Power supply
- ●Voltage (Chart sign=Vcc) : DC 5V to 24V
- ●The current capacity : About 100mA

2) Switch (Chart sign=SW)
- ●Toggle switch or Rocker switch, etc : Switch which maintains the states.
- ●Prepare switches which are enough capable for DC 10mA current or more

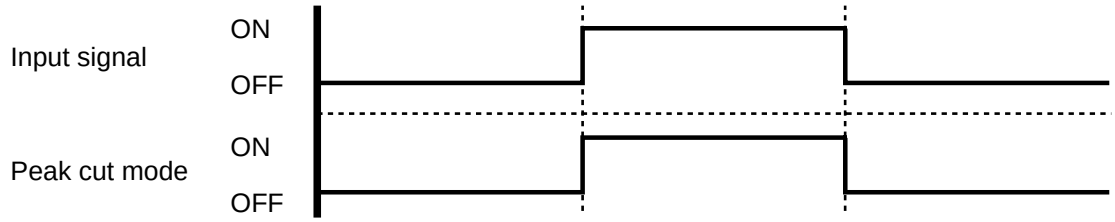
3) Resistance (Chart sign=R)
- ●Adjust the resistance for current to about DC 10mA

(Example)
- ●In case of Vcc=DC 5V : Rated resistance value 470Ω 1/4W
- ●In case of Vcc=DC 12V : Rated resistance value 1kΩ 1/4W
- ●In case of Vcc=DC 24V : Rated resistance value 2.2kΩ 1/4W

* Make the distance from the PC board to the connected unit within 10 m.

• Use the following parts and construct a circuit like that shown above.

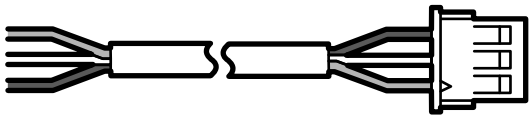
• Input signal···ON: Peak cut mode/OFF: Normal operation
*Set the "Peak cut mode" type by "Push switch" on the outdoor control PC board.



● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZXZ2

Wire (External input) : Red / White / Black



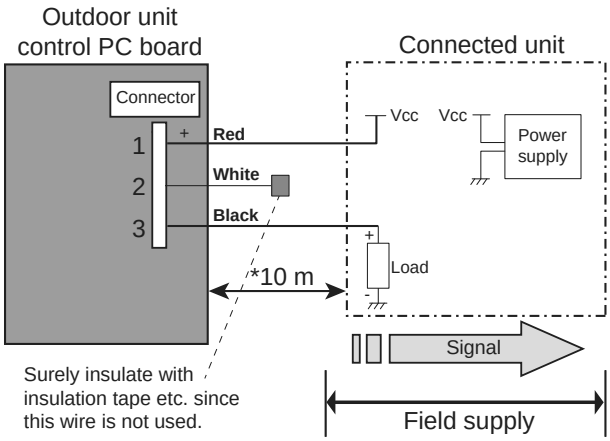
SYSTEM DESIGN

5-1-2. EXTERNAL OUTPUT

■ ERROR STATUS OUTPUT

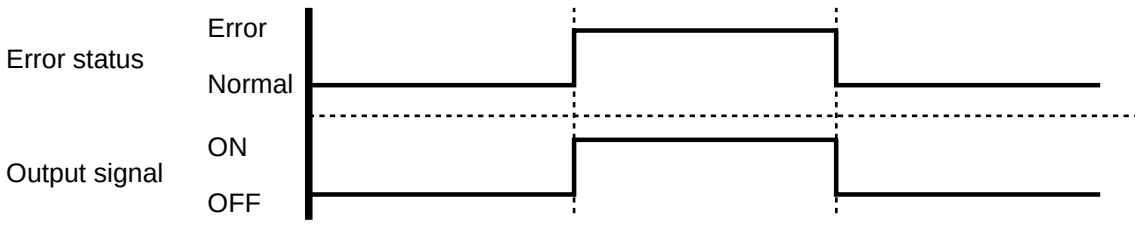
• An air conditioner error status signal can be output by means of the following on-site work.

● Circuit diagram example



1) Power supply
●Voltage (Chart sign=Vcc) : DC 24V or less
2) Load
●Load : DC 20mA or less

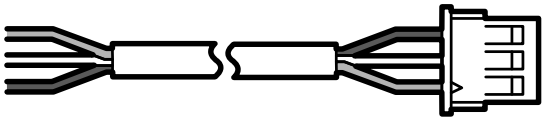
* Make the distance from the PC board to the connected unit within 10 m.



● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZXZ2

Wire (External input) : Red / White / Black

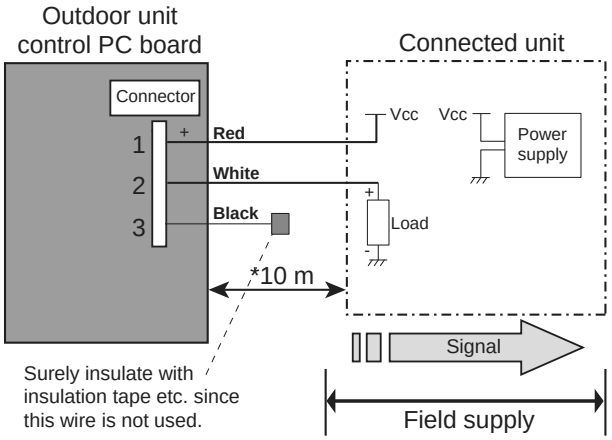


SYSTEM DESIGN

■ COMPRESSOR STATUS OUTPUT

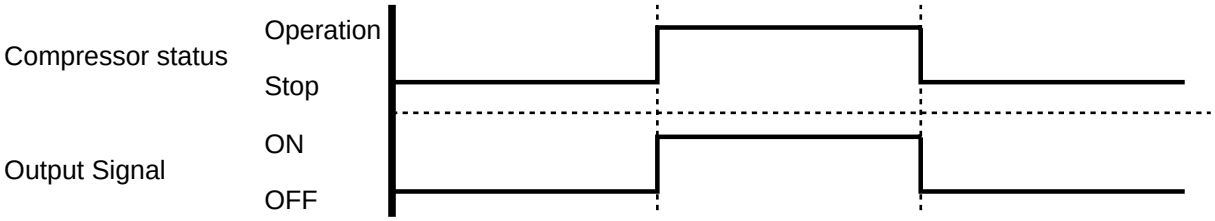
• Compressor operation status signal can be output by means of the following on-site work.

● Circuit diagram example



1) Power supply
●Voltage (Chart sign=Vcc) : DC 24V or less
2) Load
●Load : DC 20mA or less

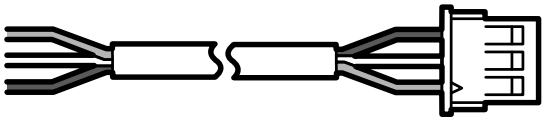
* Make the distance from the PC board to the connected unit within 10 m.



● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZXZ2

Wire (External input) : Red / White / Black



SYSTEM DESIGN

5-2. INDOOR UNIT

Input	Output	Connector		Remarks
		Other than high static pressure duct type	High static pressure duct type	
CONTROL (Operation/Stop or Forced stop)	—	CN102	CN114	See external input/output settings for details.
—	OPERATION STATUS	CN103	CN115	
—	FRESH AIR CONTROL	CN6	CN14	
—	AUXILIARY HEATER	CN10 (Duct only)	CN15	

■ CORRESPONDENCE LIST

●: Available, —: Not available

Names of types	Model	EXTERNAL INPUT	EXTERNAL OUTPUT		
		CONTROL (Operation/Stop or Forced stop)	OPERATION STATUS	FRESH AIR CONTROL	AUXILIARY HEATER
COMPACT CASSETTE	18 model	●	●	●	—
	22 model	●	●	●	—
	24 model	●	●	●	—
CASSETTE	36 model	●	●	●	—
	45 model	●	●	●	—
	54 model	●	●	●	—
FLOOR / CEILING	18 model	●	●	—	—
	22 model	●	●	—	—
	24 model	●	●	—	—
CEILING	36 model	●	●	●	—
	45 model	●	●	●	—
	54 model	●	●	●	—
SLIM DUCT	18 model	●	●	●	●
DUCT	22 model	●	●	●	●
	24 model	●	●	●	●
	36 model	●	●	●	●
	45 model	●	●	●	●
HIGH STATIC PRESSURE DUCT	45 model	●	●	●	●
	54 model	●	●	●	●

SYSTEM DESIGN

5-2-1. EXTERNAL INPUT

■ CONTROL INPUT (Operation / Stop or Forced stop)

Corresponding indoor units : All indoor units

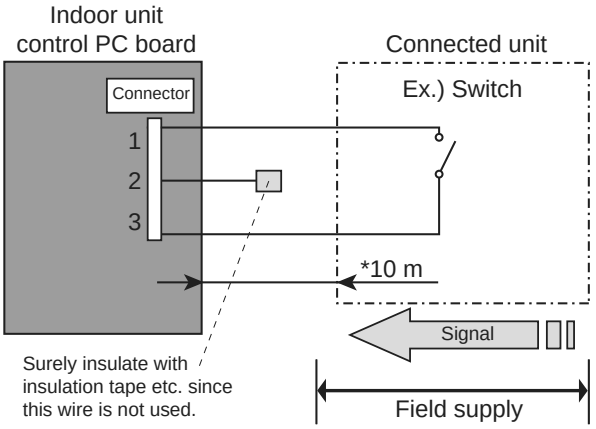
The air conditioner can be remotely operated by means of the following on-site work.

"Operation / Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.

Unit operation is started at the following contents by adding the contact input of a commercial ON / OFF switch to a connector on the external control PC board and turning it ON.

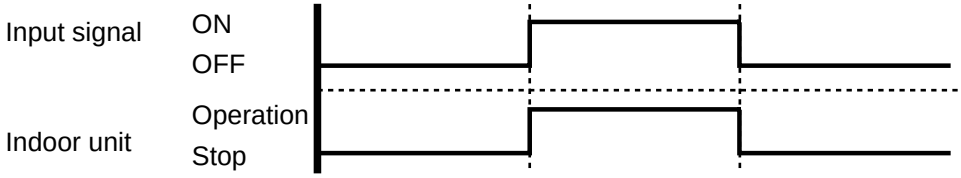
Unit operation	Initial starting after turned power on	Other than initial starting
Operation mode	Auto changeover	Mode at previous operation
Set temperature	24°C	Temperature at previous operation
Air flow mode	AUTO	Mode at previous operation
Up-down air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation
Left-right air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation

● Circuit diagram example

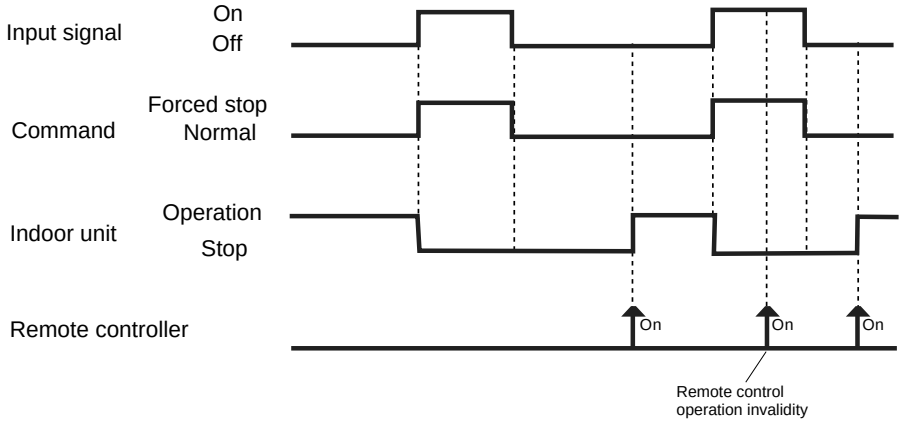


* Make the distance from the PC board to the connected unit within 10 m.
Contact capacity : 5VDC or more, 15mA or more.
Please use the non-polar relays and switches.

● When function setting is "Operation / Stop" mode



● When function setting is "Forced stop" mode



SYSTEM DESIGN

SYSTEM DESIGN

● Parts (Optional)

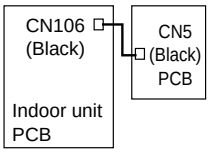
High static pressure duct type

Parts name	Model name
External control set	UTD-ECS5A

Wire (External input)

Before connecting the external input in the figure above, preparation is necessary using the signal wire in the figure below.

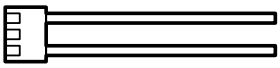
When the external input/output is used, connect the external signal wire as shown in the figure.



Other types

Parts name	Model name
External connect kit	UTY-XWZX

Wire (External input) : Orange / Yellow



SYSTEM DESIGN

SYSTEM DESIGN

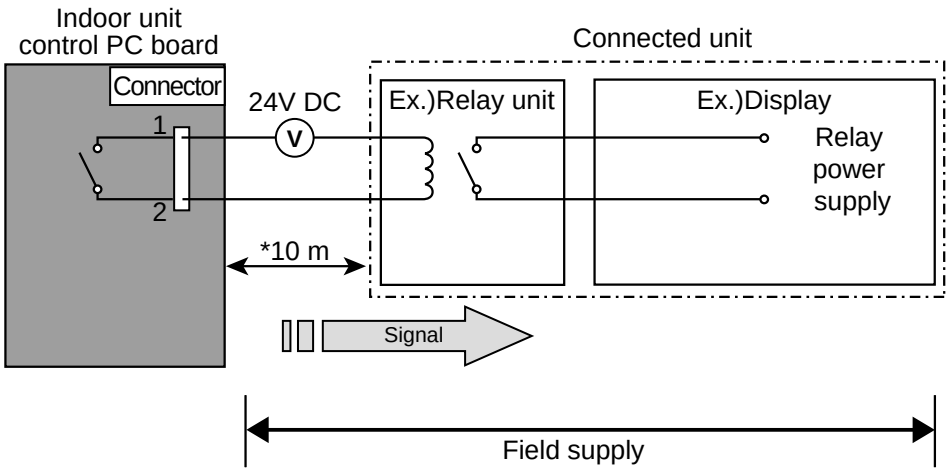
5-2-2. EXTERNAL OUTPUT

■ OPERATION STATUS OUTPUT

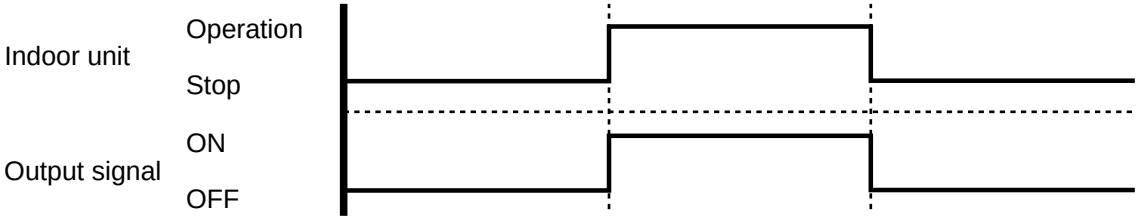
Corresponding indoor units: All indoor units

An air conditioner operation status signal can be output.

● Circuit diagram example



* Make the distance from the PC board to the connected unit within 10m.
Relay spec. : Max.24VDC, 10mA to less than 500mA.



● Parts (Optional)

High static pressure duct type

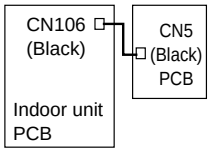
Parts name	Model name
External control set	UTD-ECS5A

You can display air conditioner ON/OFF operation by external output.

Wire (External output)

Before connecting the external input in the figure above, preparation is necessary using the signal wire in the figure below.

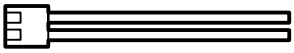
When the external input/output is used, connect the external signal wire as shown in the figure.



Other types

Parts name	Model name
External connect kit	UTY-XWZX

Wire (External output) : Blue / Purple



SYSTEM DESIGN

SYSTEM DESIGN

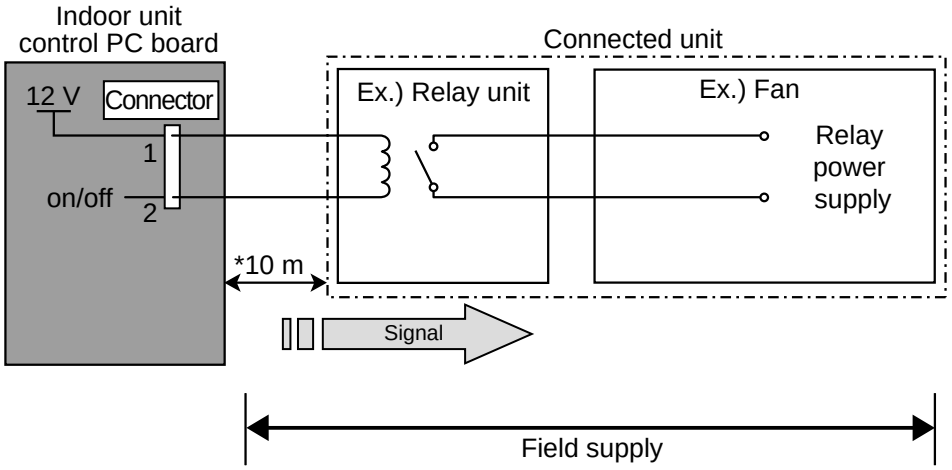
■ FRESH AIR CONTROL OUTPUT

Corresponding indoor units : All indoor units (Except for Floor/Ceiling type)

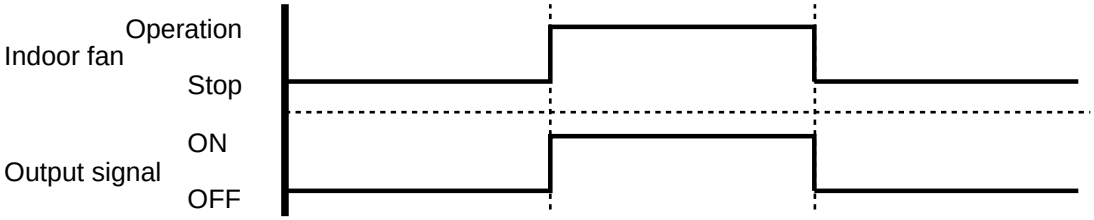
A signal linked to air conditioner indoor fan ON can be output.

* However, signal becomes OFF during cold air prevention control operation.

● Circuit diagram example



* Make the distance from the PC board to the connected unit within 10m.
Relay spec. : Rated 12VDC, 50mA or less.



● Parts (Optional)

	COMPACT CASSETTE	CASSETTE	CEILING	SLIM DUCT	DUCT	HIGH STATIC PRESSURE DUCT
Parts name	Fresh air intake kit		External control set			
Model name	UTZ-VXAA	UTZ-VXGA	UTD-ECS5A			

Only for cassette type, the table below outlines the required wire in diffrent fresh air intake options.

	No Fresh air intake	Built in Fresh air inlet	Fresh air intake kit
Wire required	N/A	UTD-ECS5A	Wire included in UTZ-VXGA

Note : This wire is included in both Fresh air intake kit and External control set.

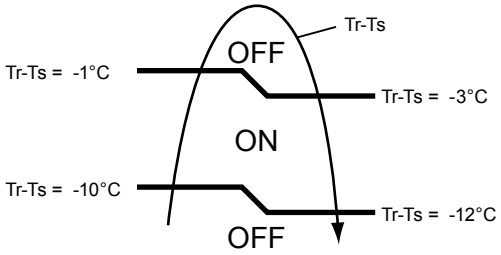
SYSTEM DESIGN

■ AUXILIARY HEATER OUTPUT

Corresponding indoor units: slim duct type, duct type, high static pressure duct type

A signal is outputed from Connector when indoor fan and compressor turn on under heating operation.

*Signal output performance specifications are as shown on the right



Ex. When Set Temperature(Ts) is 22°C

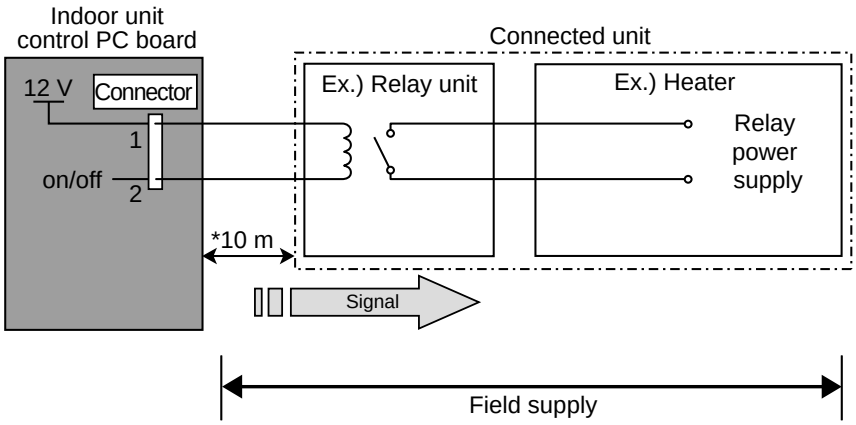
- ▪and Room Temperature(Tr) increase above 12°C, signal output is on.
- ▪and Room Temperature(Tr) increase above 21°C, signal output is off.
- ▪and Room Temperature(Tr) decrease below 19°C, signal output is on.
- ▪and Room Temperature(Tr) decrease below 10°C, signal output is off.

● Jumper wire (Indoor Unit)

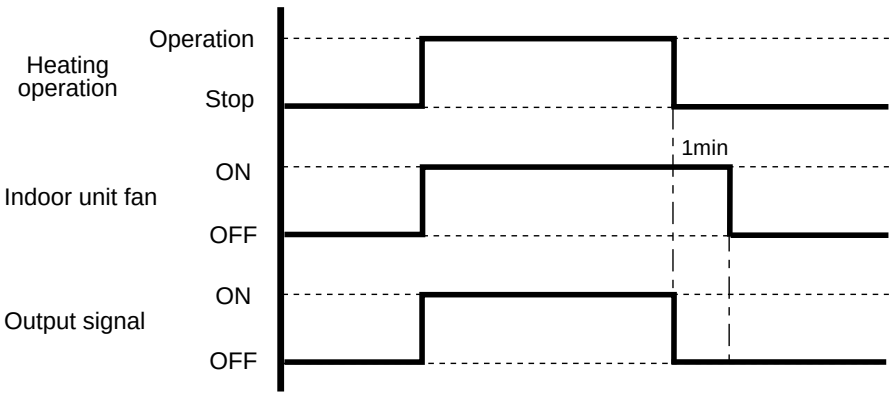
This is used to continue indoor unit fan operation for 1 minute after thermo OFF in heating mode.

1 minute delay control set by cutting jumper wire on PCB.

● Circuit diagram example



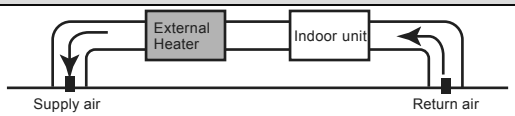
* Make the distance from the PC board to the connected unit within 10m.
Relay spec. : Rated 12VDC, 50mA or less.



⚠ CAUTION

Please locate a external heater between the indoor unit and the outlet.

Please be sure to use delay control of a fan.



● Parts (Optional)

Parts name	Model name
External control set	UTD-ECS5A

Wire (Heater output)

SYSTEM DESIGN

6. FUNCTION SETTING

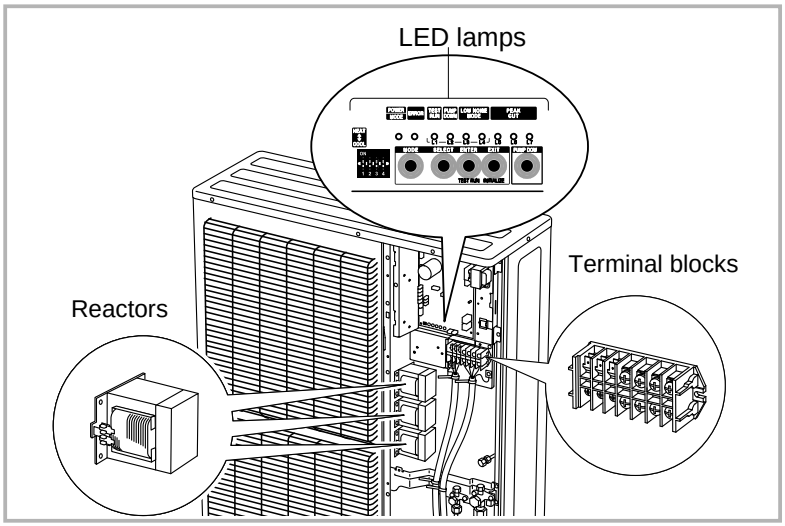
6-1. OUTDOOR UNIT

⚠ WARNING
Never touch electrical components such as the terminal blocks or reactor except the switch on the display board. It may cause a serious accident such as electric shock.

⚠ CAUTION
Discharge the static electricity from your body before setting up the push buttons. Never touch the terminals or the patterns on the parts that are mounted on the board.

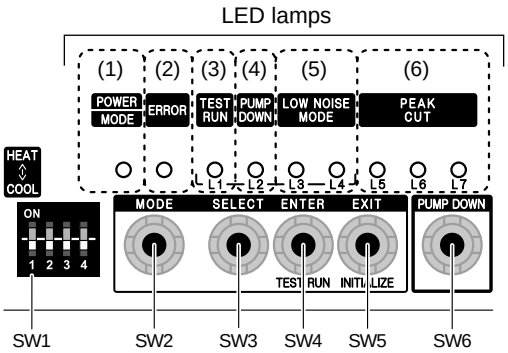
6-1-1. FIELD SETTING SWITCHES

The positions of the switches on the outdoor unit control board are shown in the figure below.



SYSTEM DESIGN

■ FUNCTIONS



Display lamp		Function or operation method
(1) POWER / MODE	Green	Lights on while power on Local setting in outdoor unit or error code is displayed with blink.
(2) ERROR	Red	Blinks during abnormal air-conditioner operation.
(3) TEST RUN (L1)	Orange	Lights on during test operation.
(4) PUMP DOWN (L2)	Orange	Lights on during pump down operation.
(5) LOW NOISE MODE (L3, L4)	Orange	Lights on during “Low noise” function when local setting is activated. (Lighting pattern of L3 and L4 indicates low noise level)
(6) PEAK CUT MODE (L5, L6, L7)	Orange	Lights on during “Peak cut” function when local setting is activated.(Lighting pattern of L5, L6 and L7 indicates peak cut level)

Switch		Function or operation method
SW1	DIP switch	For selecting cooling or heating during test operation. Positions 2 to 4 of Dip switch are not used.
SW2	Push switch	To switch between “Local setting” and “Error code display”.
SW3	Push switch	To switch between the individual “Local settings” and the “Error code displays”.
SW4	Push switch	To fix the individual “Local settings” and the “Error code displays”.
SW5	Push switch	EXIT
SW6	Push switch	To start the pump down operation.

- Dip switches 1 to 4 at shipment from the factory are set as follows.

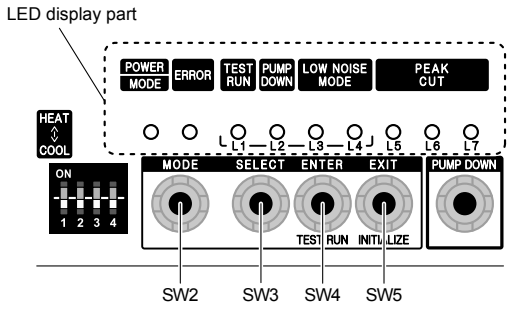
Switch			
1	2	3	4
COOL	OFF	OFF	OFF

SYSTEM DESIGN

6-1-2. SETTING METHOD

※ Stop the operation of air conditioner before this setting.

■ LOW NOISE MODE



(1) Switch to “Local setting mode” by pressing [MODE] switch (SW2) for 3 seconds or more.

(2) Confirm (POWER / MODE) blinks 9 times, and press [ENTER] switch (SW4).

POWER / MODE	ERROR	TEST RUN (L1)	PUMP DOWN (L2)	LOW NOISE (L3)	LOW NOISE (L4)	PEAK CUT (L5)	PEAK CUT (L6)	PEAK CUT (L7)
Blinks (9 times)	○	○	○	○	○	○	○	○

Sign “ ○ ” : Lights off

(3) Press [SELECT] switch (SW3), and adjust LED display as shown below. (Current setting is displayed)

	TEST RUN (L1)	PUMP DOWN (L2)	LOW NOISE (L3)	LOW NOISE (L4)
LOW NOISE MODE	○	○	○	Blink

(4) Press [ENTER] switch (SW4).

	TEST RUN (L1)	PUMP DOWN (L2)	LOW NOISE (L3)	LOW NOISE (L4)
LOW NOISE MODE	○	○	○	●

Sign “ ● ” : Lights on

(5) Press [SELECT] switch (SW3), and adjust LED display as shown in below figure.

	PEAK CUT (L5)	PEAK CUT (L6)	PEAK CUT (L7)
Level 1	○	○	Blink
Level 2	○	Blink	○

(6) Press [ENTER] switch (SW4) and fix it.

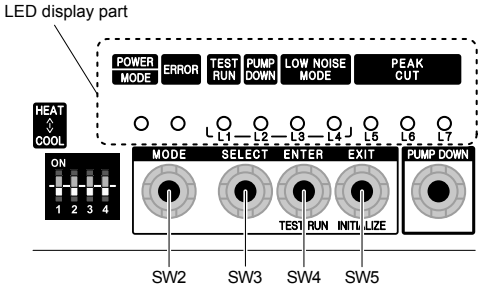
	PEAK CUT (L5)	PEAK CUT (L6)	PEAK CUT (L7)
Level 1	○	○	●
Level 2	○	●	○

(7) Return to “Operating status display (Normal operation)” by pressing [EXIT] switch (SW5).

- In case of missing how many times [SELECT] and [ENTER] switch are pressed, restart from the beginning of operation procedure after returning to “Operation status display (normal operation)” by pressing the [EXIT] switch once.

SYSTEM DESIGN

■ PEAK CUT MODE



(1) Switch to “Local setting mode” by pressing [MODE] switch (SW2) for 3 seconds or more.

(2) Confirm (POWER / MODE) blinks 9 times, and press [ENTER] switch (SW4).

POWER / MODE	ERROR	TEST RUN (L1)	PUMP DOWN (L2)	LOW NOISE (L3)	LOW NOISE (L4)	PEAK CUT (L5)	PEAK CUT (L6)	PEAK CUT (L7)
Blinks (9 times)	○	○	○	○	○	○	○	○

Sign “ ○ ” : Lights off

(3) Press [SELECT] switch (SW3), and adjust LED display as shown below. (Current setting is displayed)

	TEST RUN (L1)	PUMP DOWN (L2)	LOW NOISE (L3)	LOW NOISE (L4)
PEAK CUT MODE	○	○	Blink	○

(4) Press [ENTER] switch (SW4).

	TEST RUN (L1)	PUMP DOWN (L2)	LOW NOISE (L3)	LOW NOISE (L4)
PEAK CUT MODE	○	○	●	○

Sign “ ● ” : Lights on

(5) Press [SELECT] switch (SW3), and adjust LED display as shown in below figure.

	PEAK CUT (L5)	PEAK CUT (L6)	PEAK CUT (L7)
0% of rated input ratio	○	○	Blink
50% of rated input ratio	○	Blink	○
75% of rated input ratio	○	Blink	Blink
100% of rated input ratio	Blink	○	○

(6) Press [ENTER] switch (SW4) and fix it.

	PEAK CUT (L5)	PEAK CUT (L6)	PEAK CUT (L7)
0% of rated input ratio	○	○	●
50% of rated input ratio	○	●	○
75% of rated input ratio	○	●	●
100% of rated input ratio	●	○	○

(7) Return to “Operating status display (Normal operation)” by pressing [EXIT] switch (SW5).

• When pressed number is lost during operation, restart from the beginning of operation procedure after returning to “Operation status display (normal operation)” by pressing the [EXIT] switch once.

SYSTEM DESIGN

6-2. INDOOR UNIT (setting by printed circuit board)

INDOOR UNIT		ALL INDOOR UNITS (Except for the HIGH STATIC PRESSURE DUCT TYPE)
DIP SW	1	Remote controller address setting
	2	
	3	
	4	

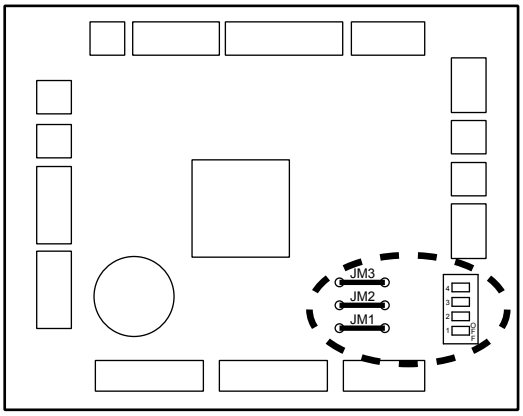
INDOOR UNIT		HIGH STATIC PRESSURE DUCT TYPE
Rotary SW	SW3	Remote controller address setting

INDOOR UNIT		SLIM DUCT	DUCT HIGH STATIC PRESSURE DUCT
Jumper Wire	JM1	Drainage function setting	Setting forbidden
	JM2	Auto louver grille setting	
	JM3	Fan delay setting	

■ SWITCH POSITION

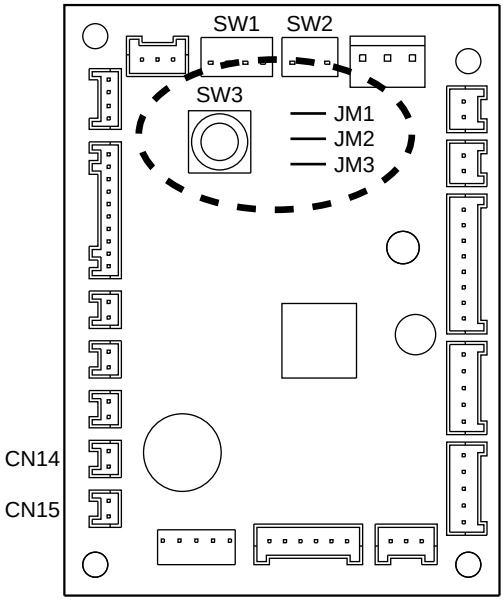
● ALL INDOOR UNITS (Except for the high static pressure duct type)

MAIN PCB



● HIGH STATIC PRESSURE DUCT TYPE

MAIN PCB



SYSTEM DESIGN

■ DIP-SW SETTING

● Remote controller address setting

A number of indoor units can be operated at the same time using a wired remote controller.
Set the unit number of each indoor unit using the DIP switches on the indoor unit circuit board.
(See the following table.)
The DIP switches are normally set to make the unit number 00.

(◆. . .Factory setting)

	Remote controller address	DIP switch No.			
		1	2	3	4
◆	00	OFF	OFF	OFF	OFF
	01	ON	OFF	OFF	OFF
	02	OFF	ON	OFF	OFF
	03	ON	ON	OFF	OFF
	04	OFF	OFF	ON	OFF
	05	ON	OFF	ON	OFF
	06	OFF	ON	ON	OFF
	07	ON	ON	ON	OFF
	08	OFF	OFF	OFF	ON
	09	ON	OFF	OFF	ON
	10	OFF	ON	OFF	ON
	11	ON	ON	OFF	ON
	12	OFF	OFF	ON	ON
	13	ON	OFF	ON	ON
	14	OFF	ON	ON	ON
	15	ON	ON	ON	ON

■ ROTARY SWITCH SETTING

● Remote controller address setting

This switch can be used when group control system. Set the remote controller address in the 1,2,-,15 order.

(◆...Factory setting)

	SW3	SW state
◆	0	single
	1-15	Remote controller address

SYSTEM DESIGN

■ JUMPER WIRE SETTING

● Drainage function setting (JM1)

(◆...Factory setting)

	JM1	Drainage function
◆	Connect	Valid
	Disconnect	Invalid

● Auto louver grille setting (JM2)

When Auto louver grille kit (optional parts) is attached, set the Auto louver grille setting "Valid".

(◆...Factory setting)

	JM2	Auto louver grille setting
◆	Connect	Invalid
	Disconnect	Valid

● Fan delay setting (JM3)

(◆...Factory setting)

	JM3	Fan delay
◆	Connect	Invalid
	Disconnect	Valid

SYSTEM DESIGN

6-3. INDOOR UNIT (setting by wireless remote controller)

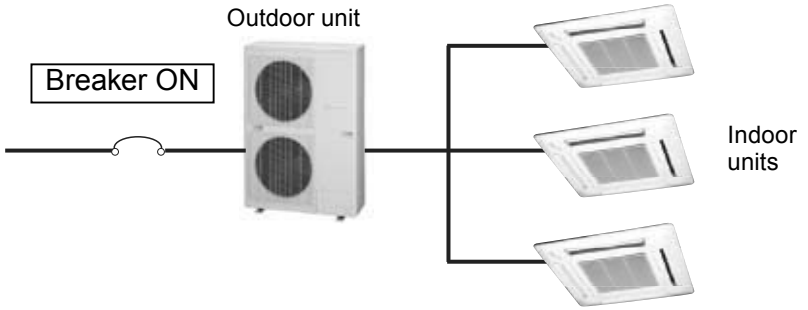
- The function settings of the control of the indoor unit can be changed by this procedure according to the installation conditions. Incorrect settings can cause the indoor unit malfunction.
- After the power is turned on, perform the “FUNCTION SETTING” according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Number.
- Settings will not be changed if invalid numbers or setting numbers are selected.

■ PREPARATION

(1) Turn on the power to the Outdoor unit.

∗ By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.

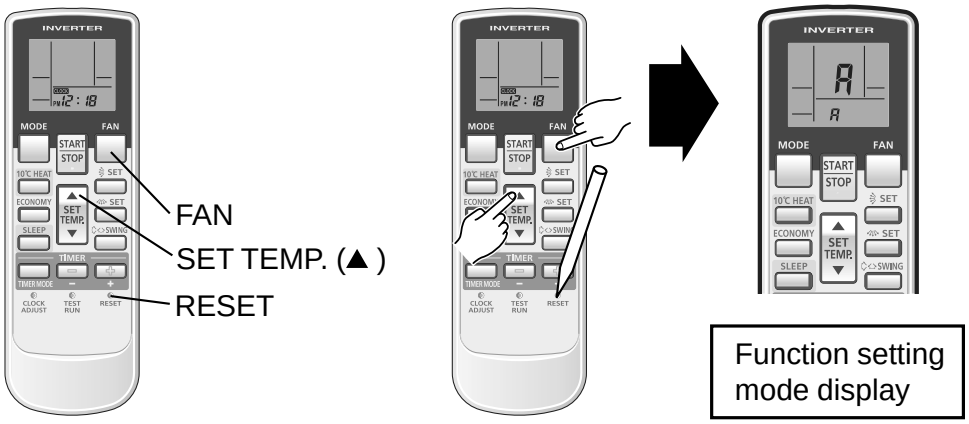
∗ Also check again to make sure no wiring mistakes were made before turning on the power.



SYSTEM DESIGN

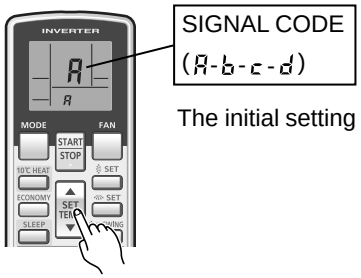
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

(2) Press and hold the “FAN” and the “ SET TEMP. ▲ ” buttons. While holding these 2 buttons, press the "RESET" button.



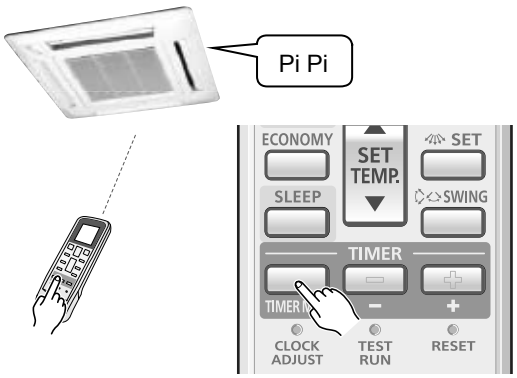
■ SELECTION AND CONFIRMATION OF SIGNAL CODE

(3) Press the “ SET TEMP. ▲ ” or “ SET TEMP. ▼ ” buttons to select the signal code that matches the setting with the indoor unit. By selecting the appropriate signal code, the communication between the indoor unit and the wireless RC become possible.



The initial setting is "A"

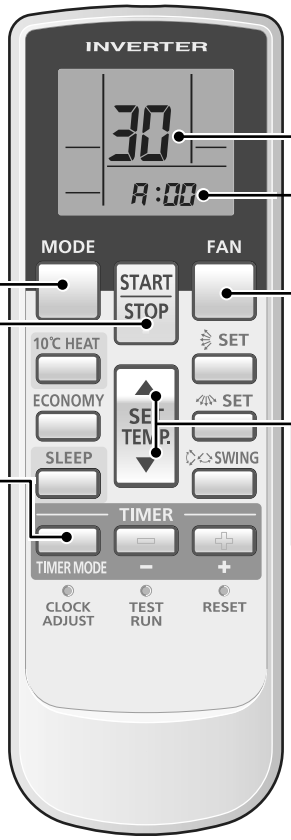
(4) Press the “TIMER MODE" button to send the code to the indoor unit.



SYSTEM DESIGN

■ BUTTON NAME AND FUNCTION

- During address setting mode, indoor unit reject the any operation command from remote controller.



Function number

Refer to FUNCTION DETAILS

Setting number

Refer to FUNCTION DETAILS

MODE button

- Start the function setting mode
- Changes the display digits

START/STOP button

Transmits function setting

FAN button

Switches between the setting number (bottom line) and function number (top line)

TIMER MODE button

Transmits function mode

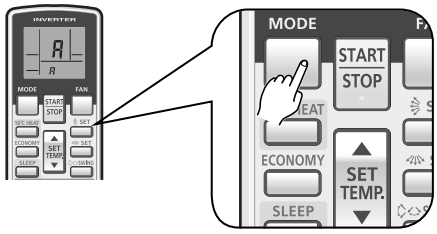
SET TEMP. " ▲ " and " ▼ " button

Increases and decreases the displayed number

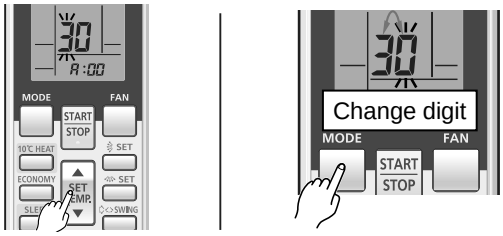
SYSTEM DESIGN

■ FUNCTION SETTING

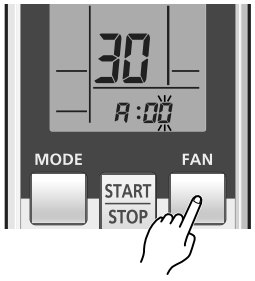
(5) Press the “MODE” button to access the function setting mode.



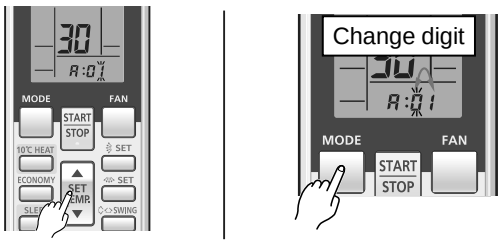
(6) Press the “ ▲ ” or the “ ▼ ” buttons to select the function number.
Each time the “MODE” button is pressed, it switches between the one's place and the ten's place positions.



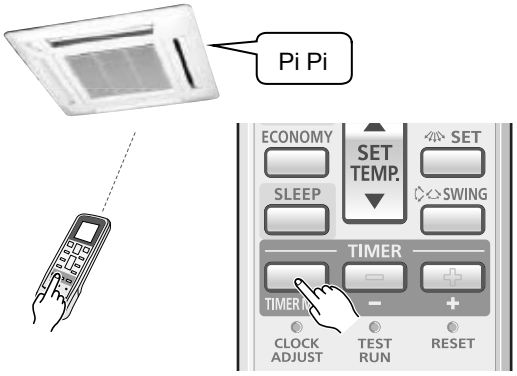
(7) Press the FAN button to proceed to setting the number. (Press the FAN button again to return to the function number selection.)



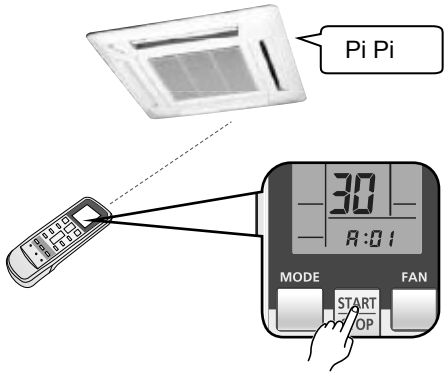
(8) Press the “ ▲ ” or the “ ▼ ” buttons to select the setting number.
Each time the “MODE” button is pressed, it switches between the one's place and the ten's place positions.



(9) Press the “TIME MODE” button once to send the function mode information.



(10) Press the “START/STOP” button once to send the function setting information.
A beeping noise will be heard if the command is accepted.
*Wrong code: No response



Note: Please push "START/STOP" button within 30 seconds after pushing "TIME MODE" button.

■ FUNCTION DETAILS

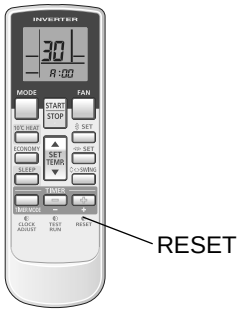
Refer to 6-6. FUNCTION DETAILS

SYSTEM DESIGN

SYSTEM DESIGN

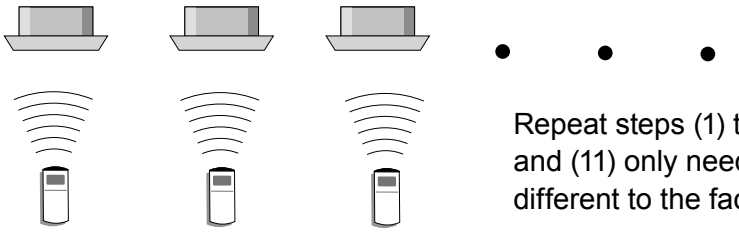
■ COMPLETION OF FUNCTION SETTING MODE

(11) Press the “RESET” button.



After pressing the RESET button, please set the signal code again if b,c,d setting.

■ SETTING UP EACH INDOOR UNIT



Repeat steps (1) through to (11). Steps (1) through to (4) and (11) only need to carried out if the signal code is different to the factory setting of “A”.

SYSTEM DESIGN

■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

- **If the reset is not performed, function can not be read in normally.**
- **After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.**
  After the 2 minutes has passed, power can be restored.
- **The set fuction is stored in the PCB and will remain in memory even when the power is turned off.**
  However setting function is effective after power reset.
  Record the function set in the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

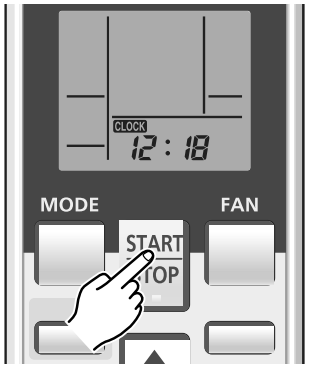
∗ Once the "RESET" button is pressed on the remote controller, the OPERATION MODE will be set in the "AUTO MODE".
Please adjust the OPERATION MODE to either "COOLING" or "HEATING" before trying to operate the air conditioner.

∗ Note : If SIGNAL CODE is set to anything other than "A" ,the remote control must be set accordingly to the INDOOR UNIT setting.

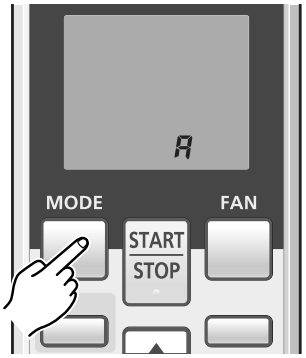
■ REMOTE CONTROLLER SIGNAL CODE SETTING

In function setting, please change to the setting that signal code setting of Wireless remote controller is the same as indoor unit according to the following content when you change signal code setting of indoor unit.

1.Press the START/STOP button until only the clock is displayed on the remote controller display.

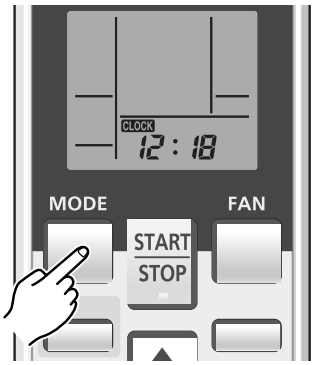


2.Press the MODE button for at least five seconds to display the current signal code (initially set to A).



3.Press the SET TEMP. " ▲ " or the " ▼ " button to change the signal code between A→B→C →D.

4.Press the MODE button again to return to the clock display. The signal code will be changed.



- If no buttons are pressed within 30 seconds after the signal code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner signal code is set to A prior to shipment.
- The remote controller resets to signal code A when the batteries in the remote controller are replaced. If you use a signal code other than signal code A, reset the signal code after replacing the batteries. If you do not know the air conditioner signal code setting, try each of the signal codes (A→B→C→D) until you find the code which operates the air conditioner.

SYSTEM DESIGN

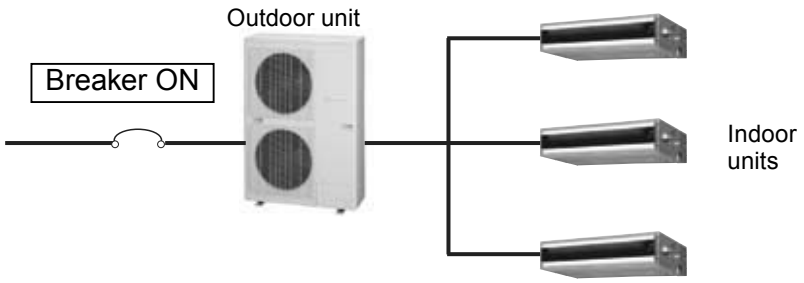
6-4. INDOOR UNIT (setting by wired remote controller)

- The function settings of the control of the indoor unit can be changed by this procedure according to the installation conditions. Incorrect settings can cause the indoor unit malfunction.
- After the power is turned on, perform the “FUNCTION SETTING” according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Number.
- Settings will not be changed if invalid numbers or setting numbers are selected.
- This function cannot be used on the secondary units.

■ PREPARATION

1) Turn on the power to the Outdoor unit.

- By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.
- Also check again to make sure no wiring mistakes were made before turning on the power.

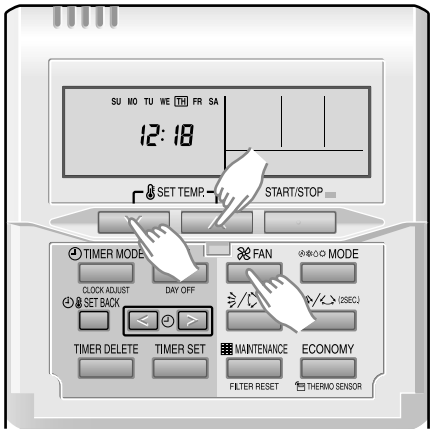


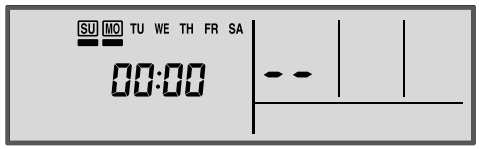
SYSTEM DESIGN

6-4-1. MODEL: UTY-RNN∗M

■ SWITCHING SELECTION OF FUNCTION SETTING MODE

2) To activate the address setting mode, hold down the three buttons of SET TEMP. V, SET TEMP. Λ and FAN at the same time for 5 seconds or longer.





Address setting mode initial display

■ BUTTON NAME AND FUNCTION

- During address setting mode, indoor unit reject the any operation command from remote controller.

SYSTEM DESIGN

Function number

Refer to FUNCTION DETAILS

Remote controller address

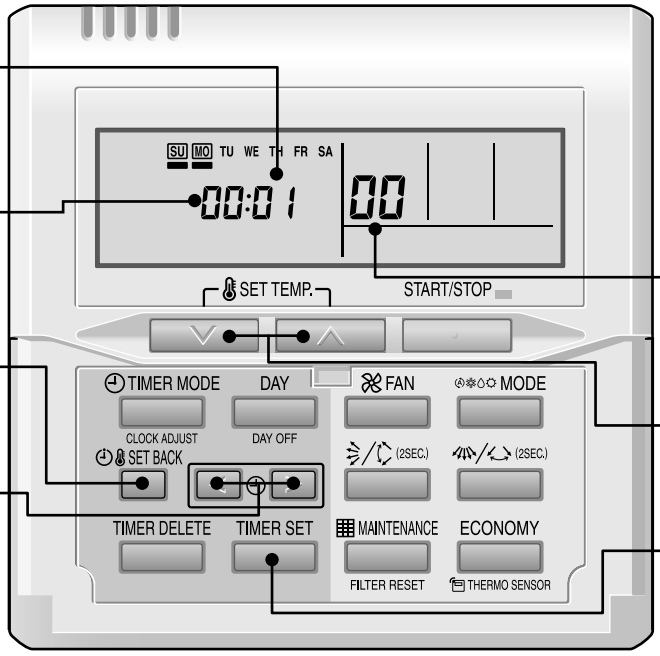
Remote controller address setting number 00-15

SET BACK button

Switches the remote controller address setting number.

SET TIME "<" and ">" button

Switches the function number.



Setting number

Refer to FUNCTION DETAILS

SET TEMP. "V" and "Λ" button

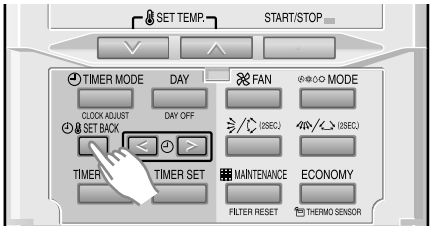
Switches the setting number.

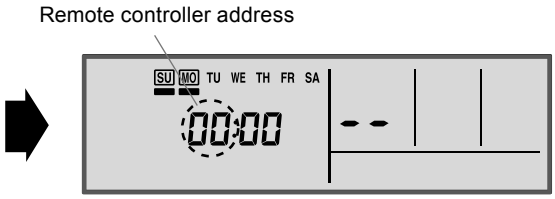
TIMER SET button

Transmits function setting

■ FUNCTION SETTING

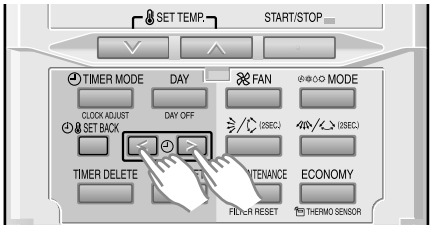
3) Pressing the SET BACK button, select a remote controller address (select the indoor unit you want to operate).

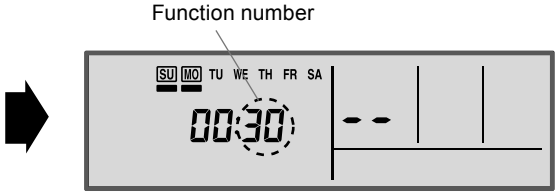




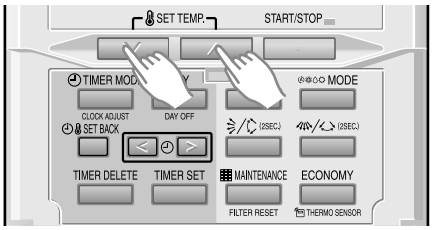
Ex.) When remote controller address “00” is selected

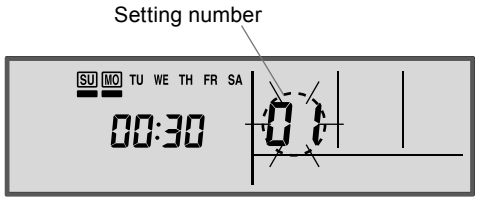
4) Pressing the SET TIME < button or the SET TIME > button, to select the function number.





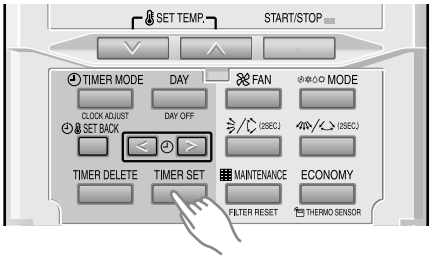
5) Pressing the SET TEMP. V button or the SET TEMP. Λ button, to select the setting number. The display flashes during setting number selection.

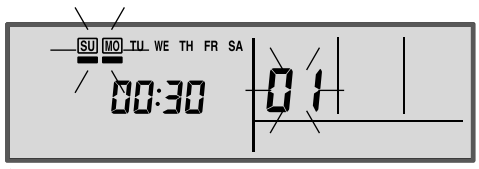




Ex.) Function number : 30, Setting number : 01

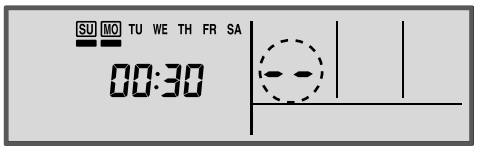
6) Pressing the TIMER SET button, confirm the setting.
(The data will be transferred to the indoor unit.)



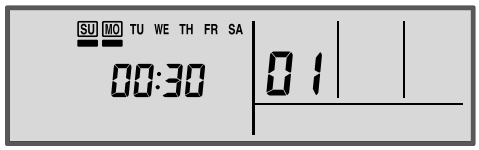


ERROR

GOOD



- When the data was not set up on the indoor unit (-- is displayed.)
- Set up the data again according to the procedure in step 6), 7) above.



When the data was normally set up on the indoor unit
(Flashing display changes to illuminated display.)

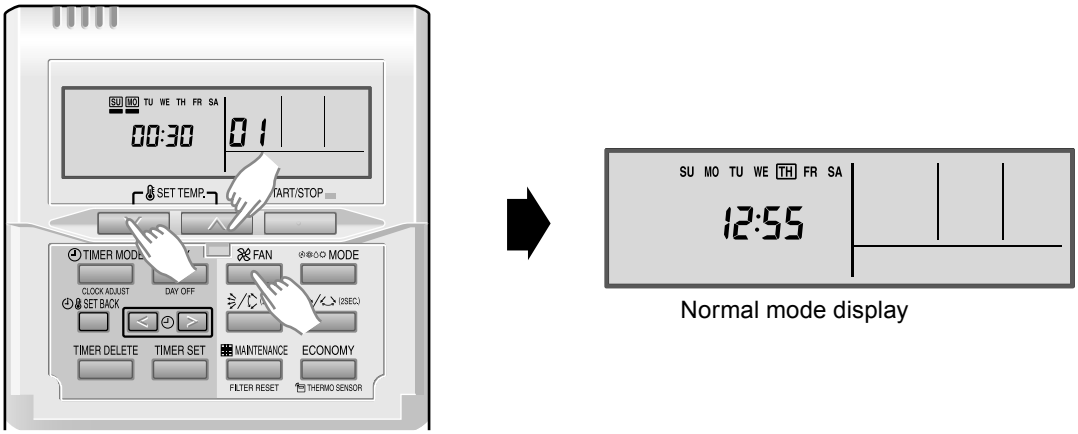
■ FUNCTION DETAILS

Refer to 6-6. FUNCTION DETAILS

SYSTEM DESIGN

■ COMPLETION OF FUNCTION SETTING MODE

7) To clear the function setting mode and return to the regular display, hold down the three buttons of SET TEMP. V, SET TEMP. Λ and FAN at the same time.



Normal mode display

*If no key entry is made for 60 seconds, even though none of the above buttons is pressed, the function setting mode will automatically be cleared.
(If the function setting mode is automatically cleared while setting addresses, activate the mode again according to the procedure in step 2) above.)

■ SETTING UP EACH INDOOR UNIT

Repeat the procedures in steps 1) through 7), and set up the indoor units requiring function setting.

■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

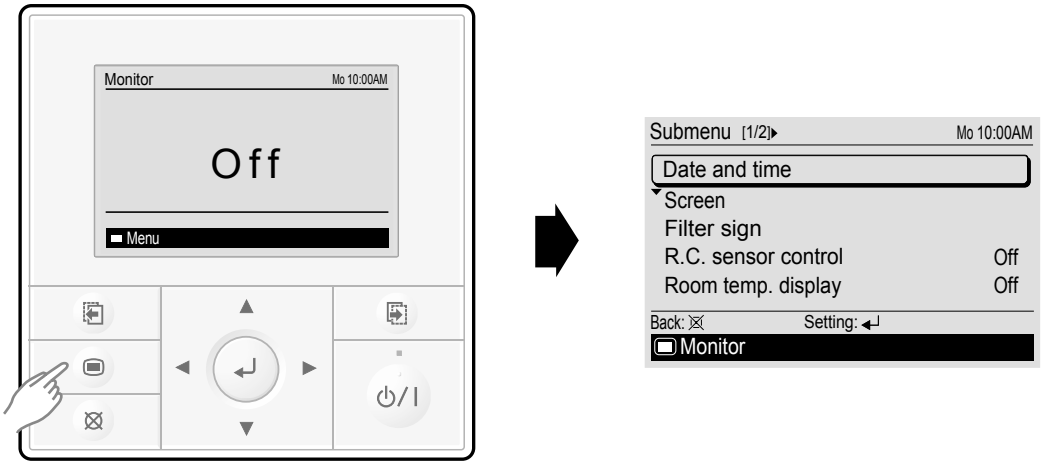
∗ If the reset is not performed, function can not be read in normally.
∗ After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
∗ The set function is stored in the PCB and will remain in memory even when the power is turned off.
However setting function is effective after power reset.
Record the function set in the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

SYSTEM DESIGN

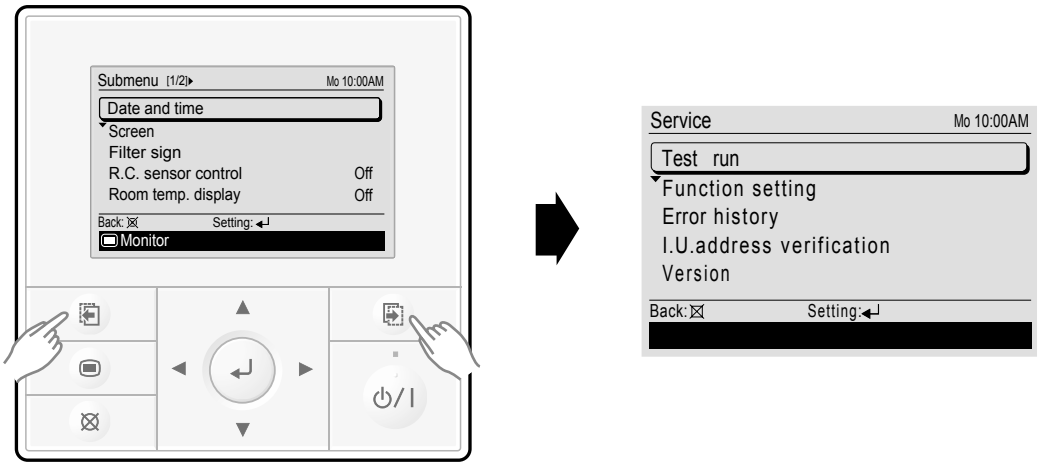
6-4-2.MODEL: UTY-RVN∗M

■ SWITCHING SELECTION OF FUNCTION SETTING MODE

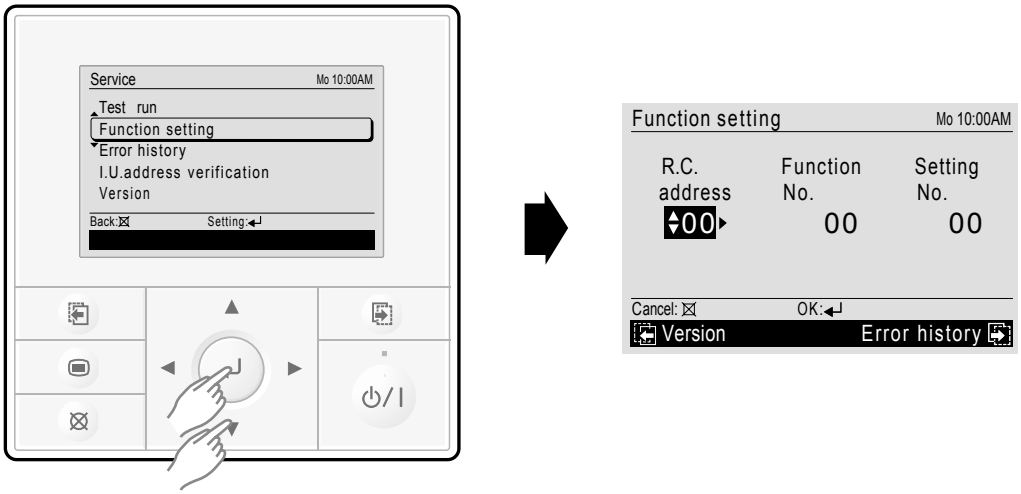
2) When [Menu button] is pressed twice while “Monitor” screen is displayed, it switches to the “Submenu” screen. If [Menu button] is pressed while the “Submenu” screen is displayed, the display returns to the “Monitor” screen.



Press the [Screen switch button (Left)] and [Screen switch button (Right)] simultaneously for 5 seconds to switch to “Service” screen.



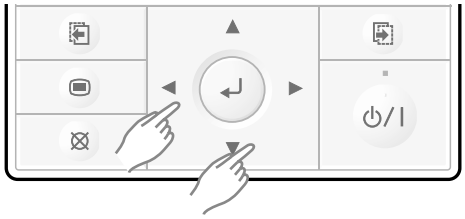
Select [Function setting] with pressing the [Cursor button (Up/Down)], and press the [Enter button].

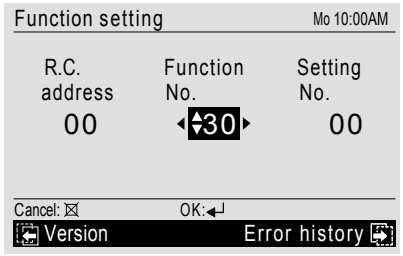


SYSTEM DESIGN

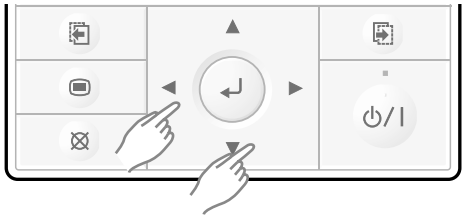
■ FUNCTION SETTING

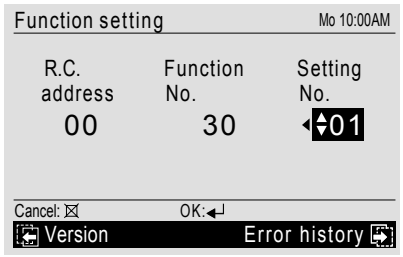
3) Select the [Function No.] with pressing the [Cursor button (Left/Right)], and select the Function No. to be set with pressing the [Cursor button (Up/Down)].



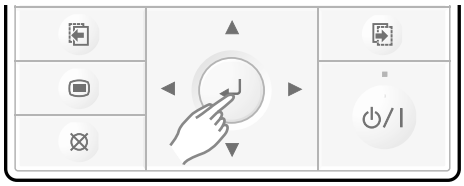


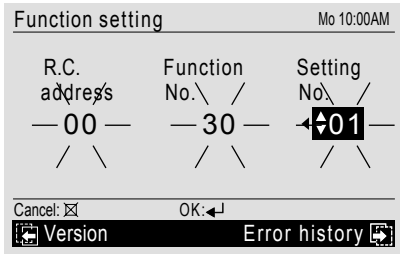
4) Select the [Setting No.] with pressing the [Cursor button (Left/Right)], and select the Setting No. to be set with pressing the [Cursor button (Up/Down)].





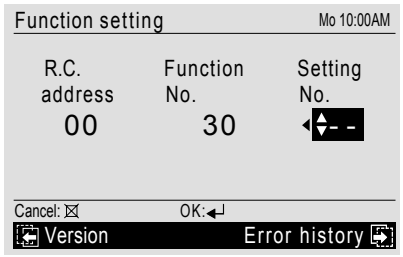
5) Pressing the [Enter button], confirm the setting.
(The data will be transferred to the indoor unit.)



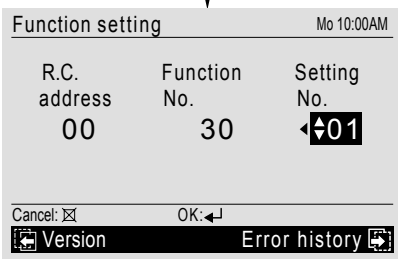


ERROR

GOOD



- When the data was not set up on the indoor unit (-- is displayed.)
- Set up the data again according to the procedure in step 3), 4) above.



When the data was normally set up on the indoor unit
(Flashing display changes to illuminated display.)

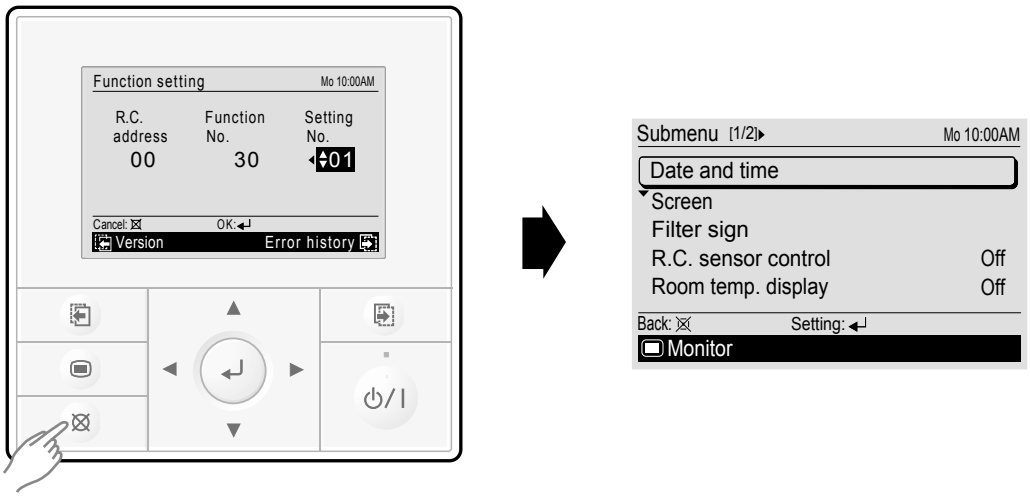
■ FUNCTION DETAILS

Refer to 13-5. FUNCTION DETAILS

SYSTEM DESIGN

■ COMPLETION OF FUNCTION SETTING MODE

6) When [Cancel button] is pressed twice while “Function setting” screen is displayed, it switches to the “Submenu” screen.



*If no key entry is made for 60 seconds, even though none of the above buttons is pressed, the function setting mode will automatically be cleared.
(If the function setting mode is automatically cleared while setting addresses, activate the mode again according to the procedure in step 2) above.)

■ SETTING UP EACH INDOOR UNIT

Repeat the procedures in steps 1) through 6), and set up the indoor units requiring function setting.

■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

∗ If the reset is not performed, function can not be read in normally.
∗ After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
∗ The set function is stored in the PCB and will remain in memory even when the power is turned off.
However setting function is effective after power reset.
Record the function set in the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

SYSTEM DESIGN

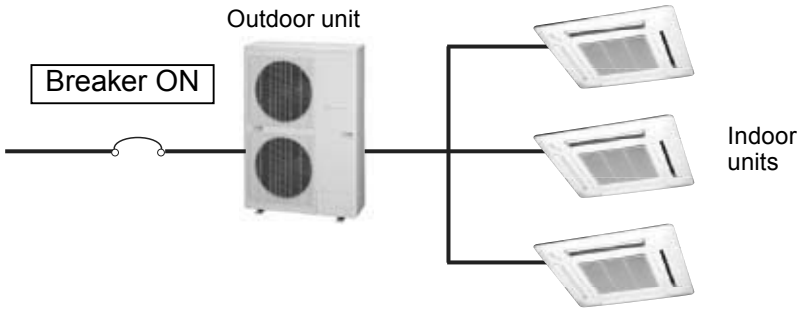
6-5. INDOOR UNIT (setting by simple remote controller)

- The function settings of the control of the indoor unit can be changed by this procedure according to the installation conditions. Incorrect settings can cause the indoor unit malfunction.
- After the power is turned on, perform the “FUNCTION SETTING” according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Number.
- Settings will not be changed if invalid numbers or setting numbers are selected.
- This function cannot be used on the secondary units.

■ PREPARATION

(1) Turn on the power to the Outdoor unit.

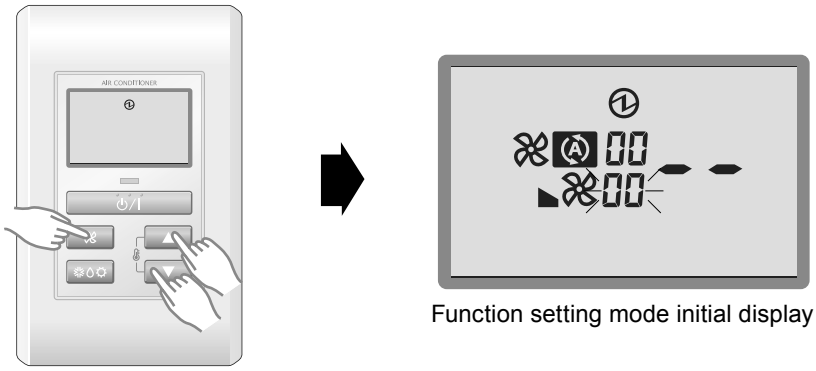
- By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.
- Also check again to make sure no wiring mistakes were made before turning on the power.



SYSTEM DESIGN

■ SWITCHING SELECTION OF FUNCTION SETTING MODE

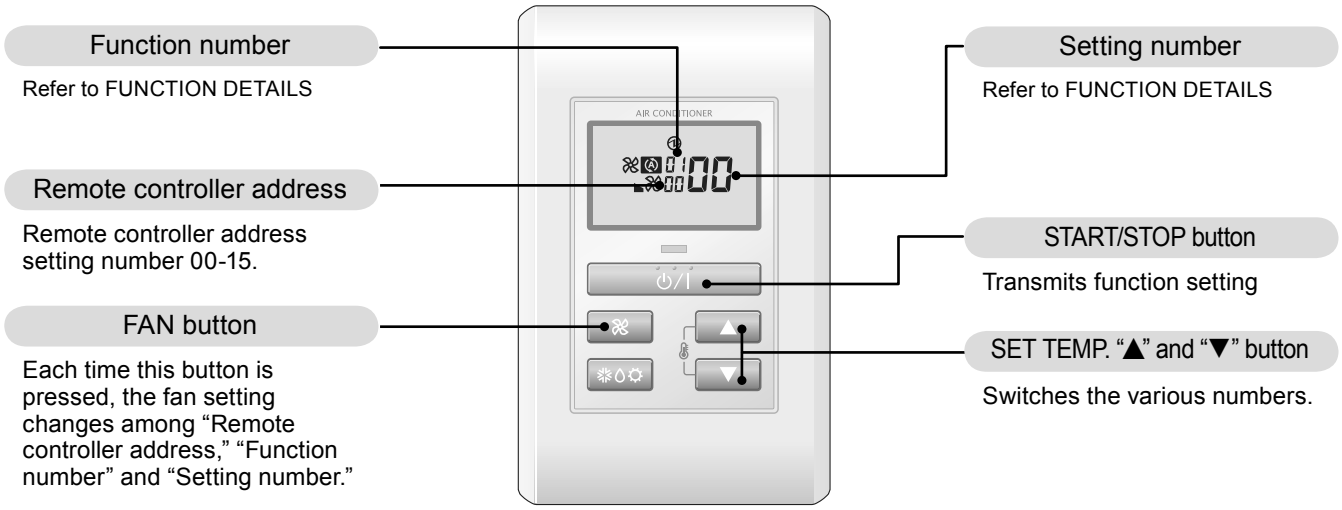
2) To activate the function setting mode, hold down the three buttons of SET TEMP. ▼, SET TEMP. ▲ and FAN at the same time for 5 seconds or longer.



Function setting mode initial display

■ BUTTON NAME AND FUNCTION

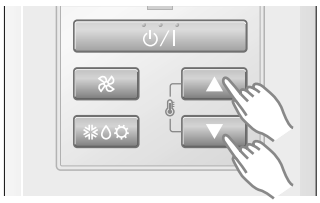
- During function setting mode, indoor unit reject the any operation command from remote controller.

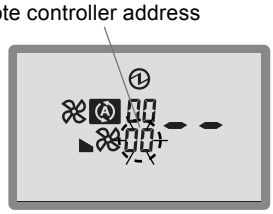

Function number
Refer to FUNCTION DETAILS
Remote controller address
Remote controller address setting number 00-15.
FAN button
Each time this button is pressed, the fan setting changes among “Remote controller address,” “Function number” and “Setting number.”
Setting number
Refer to FUNCTION DETAILS
START/STOP button
Transmits function setting
SET TEMP. “▲” and “▼” button
Switches the various numbers.

SYSTEM DESIGN

■ FUNCTION SETTING

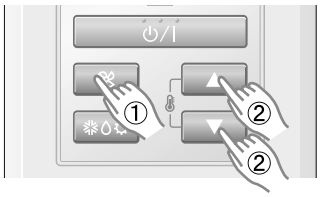
3) Pressing the SET TEMP. ▲ button or SET TEMP. ▼ button, select a remote controller address (select the indoor unit you want to operate).

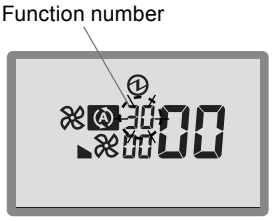




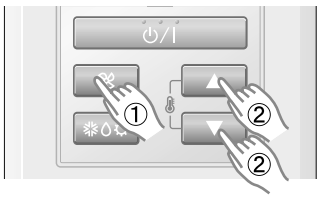
Ex.) When remote controller address “00” is selected

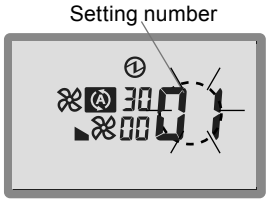
4) Press the FAN button so that the “Function number” display flashes. Then, press either the SET TEMP. ▲ button or the SET TEMP. ▼ button to set up the function number.





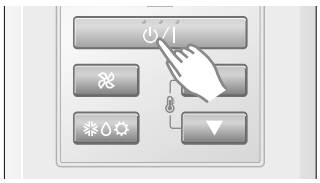
5) Press the FAN button so that the “Setting number” display flashes. Then, press either the SET TEMP. ▲ button or the SET TEMP. ▼ button to set up the setting number.

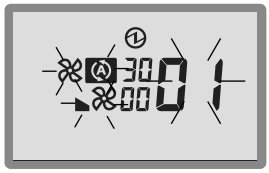




Ex.) Function number : 30, Setting number : 01

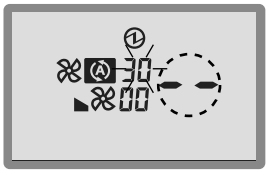
6) Pressing the START/STOP button, confirm the setting.
(The data will be transferred to the indoor unit.)

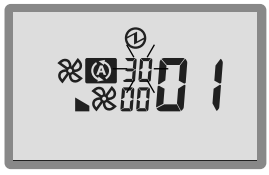




ERROR

GOOD





- When the data was not set up on the indoor unit (-- is displayed.)
- Set up the data again according to the procedure in step 4), 5) above.

When the data was normally set up on the indoor unit.

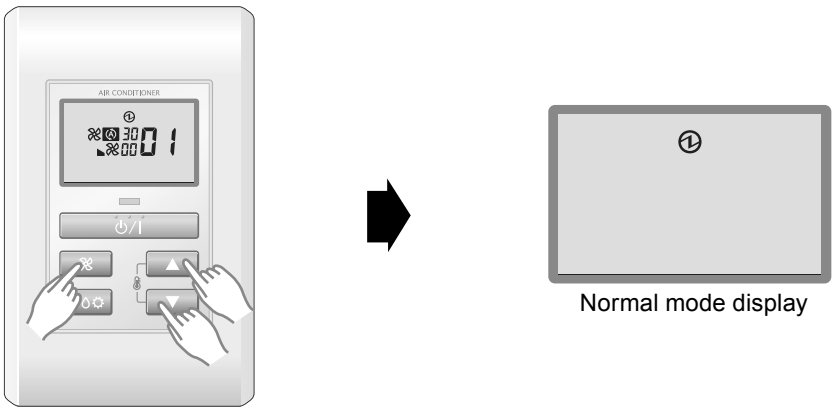
■ FUNCTION DETAILS

Refer to 6-6. FUNCTION DETAILS

SYSTEM DESIGN

■ COMPLETION OF FUNCTION SETTING MODE

7) Press the three buttons of SET TEMP. ▲, SET TEMP. ▼ and FAN at the same time for 5 seconds or longer. The function setting mode will be cleared and the regular display will be restored.



Normal mode display

*If no key entry is made for 60 seconds, even though none of the above buttons is pressed, the function setting mode will automatically be cleared.
(If the function setting mode is automatically cleared while setting addresses, activate the mode again according to the procedure in step 2) above.)

■ SETTING UP EACH INDOOR UNIT

Repeat the procedures in steps 1) through 7), and set up the indoor units requiring function setting.

■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

∗ If the reset is not performed, function can not be read in normally.
∗ After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
∗ The set function is stored in the PCB and will remain in memory even when the power is turned off.
However setting function is effective after power reset.
Record the function set in the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

SYSTEM DESIGN

6-6. FUNCTION DETAILS

Functions			Single System				Simultaneous Multi System			
			Cassette	Duct	High static pressure duct	Ceiling	Compact cassette	Slim duct	Duct	Floor/ ceiling
1)	Refrigerant circuit address		●	●	●	●	●	●	●	●
2)	Filter sign		●	●	●	●	●	●	●	●
3)	Ceiling height		●	—	—	●	●	—	—	●
4)	Static pressure	Function number '21'	—	●	—	—	—	—	●	—
		Function number '26'	—	—	—	—	—	●	—	—
5)	Outlet directions		●	—	—	—	●	—	—	—
6)	Vertical wind direction adjustment range		●	—	—	—	—	—	—	—
7)	Cooler room temperature correction		●	●	●	●	●	●	●	●
8)	Heater room temperature correction		●	●	●	●	●	●	●	●
9)	Auto restart		●	●	●	●	●	●	●	●
10)	Indoor room temperature sensor switching function		●	●	●	●	●	●	●	●
11)	Cool air prevention		—	●	●	—	—	—	●	—
12)	Remote controller signal code		●	●	●	●	●	●	●	●
13)	External input control		●	●	●	●	●	●	●	●
14)	Room Temperature Control Switching		—	—	●	—	—	—	—	—
15)	Indoor unit fan control for energy saving		●	●	—	●	●	●	●	●
16)	Primary and secondary settings		—	—	—	—	●	●	●	●

SYSTEM DESIGN

SYSTEM DESIGN

1) Refrigerant circuit address

Assign the same number to all of the indoor units connected to an outdoor unit.

Refrigerant circuit address	Function Number	Setting Value
00	02	00 to 15
01		
≀		
14		
15		

2) Filter sign

The indoor unit has a sign to inform the user that it is time to clean the filter. Select the time setting for the filter sign display interval in the table below according to the amount of dust or debris in the room. If you do not wish the filter sign to be displayed, select the setting value for "No indication".

(◆... Factory setting)

	Setting description	Function number	Setting value
	Standard	11	00
	Long interval		01
	Short interval		02
◆	No indication		03

The filter sign interval time is different according to Indoor unit type as follows.

Setting description	Single System				Simultaneous Multi System			
	Cassette	Duct	High static pressure duct	Ceiling	Compact cassette	Slim duct	Duct	Floor/ ceiling
Standard	2500 hours					400 hours	2500 hours	400 hours
Long interval	4400 hours		5000 hours	4400 hours		1000 hours	4400 hours	1000 hours
Short interval	1250 hours					200 hours	1250 hours	200 hours

3) Ceiling height

Select the setting values in the table below according to the height of the ceiling.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Standard	20	00
	High ceiling		01
	Low ceiling (Cassette type only)		02

4) Static pressure

Select appropriate static pressure according to the installation conditions.

4-1) Duct type

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Normal	21	00
	High static pressure 1		01
	High static pressure 2		02
	High static pressure 3		03

Determine the air flow in each mode i.e., applicable range of static pressure.

⚠ CAUTION
• If the applicable static pressure does not match the static pressure mode, the static pressure mode maybe changed to another mode automatically.

RECOMMENDED RANGE OF EXTERNAL STATIC PRESSURE [Pa]
30 to 150

4-2) Slim duct type

(◆... Factory setting)

	Setting description	Function number	Setting value
	0 Pa	26	00
	10 Pa		01
	20 Pa		02
	30 Pa		03
	40 Pa		04
	50 Pa		05
	60 Pa		06
	70 Pa		07
	80 Pa		08
	90 Pa		09
◆	25 Pa [Standard]		31

5) Outlet directions

Select the setting values in the table below for using a 3-way outlet.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	4-way	22	00
	3-way		01

SYSTEM DESIGN

6) Vertical wind direction adjustment range

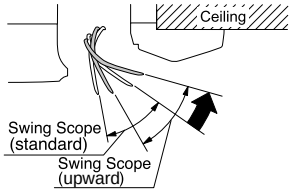
•The use of “upward” is recommended if you wish to prevent draft. (The unit is factory-set to “00”)

•Note that the ceiling may become dirty depending on your usage condition.When this happens, we recommend the use of the optional “PANEL SPACER KIT”.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Standard	23	00
	upward		01

•We recommend the use of “upward” when using “High ceiling mode”.



7) Cooler room temperature correction

Depending on the installed environment, the room temperature sensor may require a correction.

The settings may be selected as shown in the table below.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Standard	30	00
	Slightly lower control		01
	Lower control		02
	Warmer control		03

When using floor console installation, change the setting value to "01".
(Only slim duct type and Floor/Ceiling type)

8) Heater room temperature correction

Depending on the installed environment, the room temperature sensor may require a correction.

The settings may be changed as shown in the table below.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Standard	31	00
	Lower control		01
	Slightly warmer control		02
	Warmer control		03

When using floor console installation, change the setting value to "01".
(Only slim duct type and Floor/Ceiling type)

9) Auto restart

Enable or disable automatic system restart after a power outage.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Yes	40	00
	No		01

*Auto restart is an emergency function such as for power failure etc.
Do not start and stop the indoor unit by this function in normal operation.
Be sure to operate by the control unit, or external input device.

SYSTEM DESIGN

10) Indoor room temperature sensor switching function

(Only for Wired remote controller)

The following settings are needed when use the control by Wired remote controller temperature sensor.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	No	42	00
	Yes		01

*If setting value is “00” :
Room temperature is controlled by the indoor unit temperature sensor.

*If setting value is “01” :
Room temperature is controlled by either indoor unit temperature sensor or remote controller unit sensor.

11) Cool air prevention

This setting is used to set the fan speed when the compressor stops once the room temperature has reached the set temperature during heating operation.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Super low	43	00
	Follow the setting on the remote controller (corresponding to ventilation)		01

12) Remote controller signal code

Change the indoor unit Signal Code, depending on the remote controllers.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	A	44	00
	B		01
	C		02
	D		03

13) External input control

"Operation/Stop" mode or "Forced stop" mode can be selected.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Operation/Stop mode	46	00
	(Setting forbidden)		01
	Forced stop mode		02

14) Room Temperature Control Switching

This setting is used to set the room temperature control method when the wired remote controller is selected by the Indoor Room Temperature Sensor Switching Function.
(The unit is factory-set to “00”.)

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Control by the sensors of both the indoor unit and the wired remote controller.	48	00
	Control only by the sensor of the wired remote controller		01

SYSTEM DESIGN

15) Indoor unit fan control for energy saving (Only cooling mode)

Enable or disable indoor unit fan control when the outdoor unit is stopped.

(◆... Factory setting)

	Setting description	Function number	Setting value
	No	49	00
◆	Yes		01

* If setting value is "00":
  When the outdoor unit is stopped, the indoor unit fan operates following the setting on the remote controller continuously.
* If setting value is "01":
  When the outdoor unit is stopped, the indoor unit fan operates at very low speed intermittently.

16) Primary and secondary settings

set the indoor unit that is connected to the outdoor unit using a transmission cable as the primary.

(◆... Factory setting)

	Setting description	Function number	Setting value
◆	Primary	51	00
	Secondary		01

SYSTEM DESIGN

6-7. WIRED REMOTE CONTROLLER

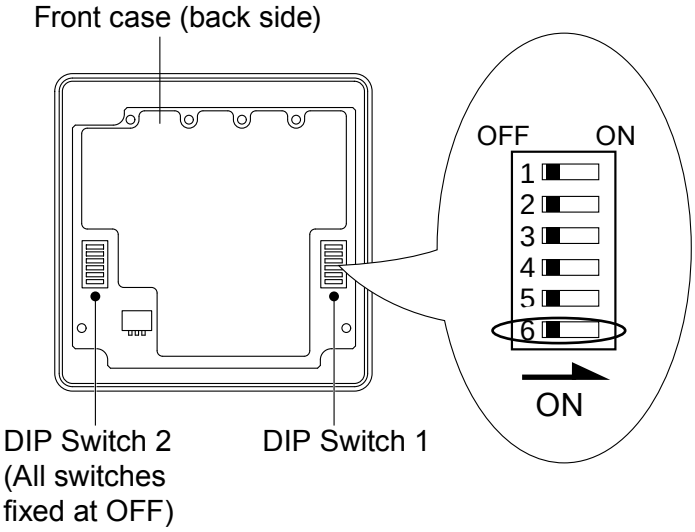
6-7-1. MODEL: UTY-RNN∗M

DIP Switch 1	SW1	Forbidden
	SW2	Dual remote controller setting
	SW3	Forbidden
	SW4	°F / °C switch
	SW5	Forbidden
	SW6	Memory backup setting

* Do not use DIP Switch 2

■ SWITCH POSITION

● Wired remote controller



SYSTEM DESIGN

■ DIP SWITCH 1 SETTING

● SW1 setting forbidden

(◆...Factory setting)

	SW1	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

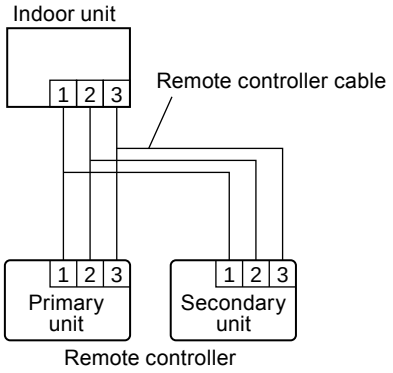
● SW2 setting

● Dual remote controller setting

Set the remote controller SW2 according to the following table.

(◆...Factory setting)

	Number of remote controller	Primary unit	Secondary unit
		SW2	SW2
◆	1 (Normal)	OFF	-
	2 (Dual)	OFF	ON



● SW3 setting forbidden

(◆...Factory setting)

	SW3	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

● SW4 setting

● °F / °C switch

Temperature display is Fahrenheit(°F) / Celsius(°C)

(◆...Factory setting)

	SW4	
◆	OFF	°C
	ON	°F

SYSTEM DESIGN

●SW5 setting forbidden

(◆...Factory setting)

	SW5	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

●SW6 setting

●Memory backup setting

Set to ON to use batteries for the memory backup.

If batteries are not used, all of settings stored in memory will be deleted if there is a power failure.

(◆...Factory setting)

	SW6	Memory backup
◆	OFF	Invalidity
	ON	Validity

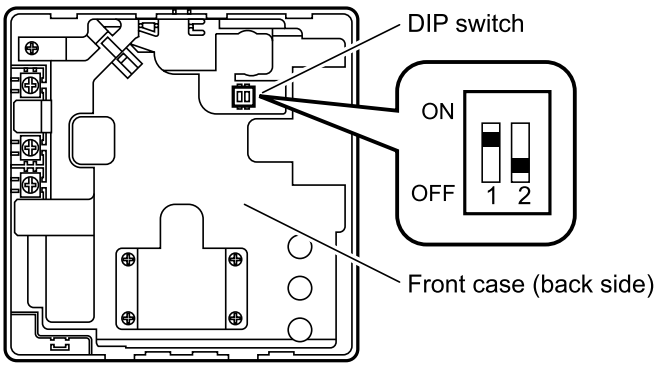
SYSTEM DESIGN

6-7-2. MODEL: UTY-RVN∗M

DIP Switch	SW1	Memory backup setting
	SW2	Dual remote controller setting

■ SWITCH POSITION

● Wired remote controller



■ DIP SWITCH SETTING

● Memory backup setting

Set to ON to use batteries for the memory backup.

If batteries are not used, all of settings stored in memory will be deleted if there is a power failure.

(◆...Factory setting)

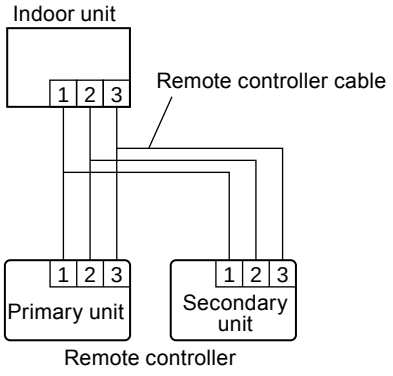
	SW1	Memory backup
◆	OFF	Invalidity
	ON	Validity

● Dual remote controller setting

Set the remote controller SW2 according to the following table.

(◆...Factory setting)

	Number of remote controller	Primary unit	Secondary unit
		SW2	SW2
◆	1 (Normal)	OFF	-
	2 (Dual)	OFF	ON



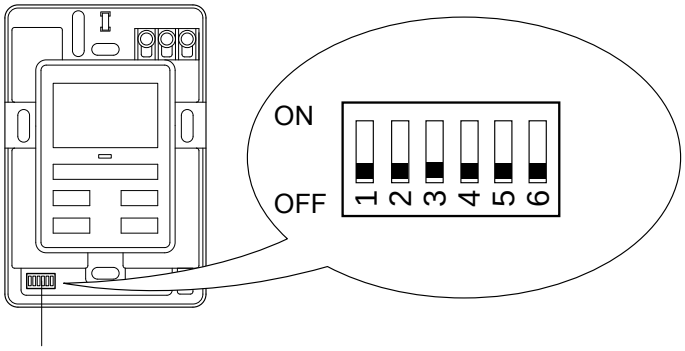
SYSTEM DESIGN

6-8. SIMPLE REMOTE CONTROLLER

DIP Switch	SW1	Forbidden
	SW2	Dual remote controller setting
	SW3	°F / °C switch
	SW4	Forbidden
	SW5	Forbidden
	SW6	Forbidden

■ SWITCH POSITION

● Simple remote controller



DIP Switch

SYSTEM DESIGN

■ DIP SWITCH SETTING

● SW1 setting forbidden

(◆...Factory setting)

	SW1	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

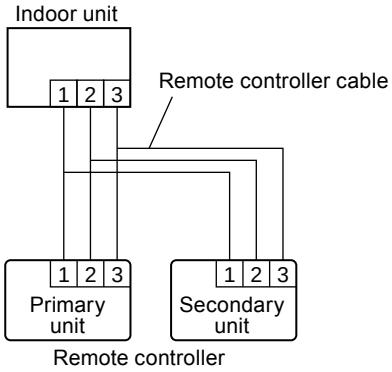
● SW2 setting

● Dual remote controller setting

Set the remote controller SW2 according to the following table.

(◆...Factory setting)

	Number of remote controller	Primary unit	Secondary unit
		SW2	SW2
◆	1 (Normal)	OFF	-
	2 (Dual)	OFF	ON



● SW3 setting

● °F / °C switch

Temperature display is Fahrenheit(°F) / Celsius(°C)

(◆...Factory setting)

	SW3	
◆	OFF	°C
	ON	°F

● SW4 setting forbidden

(◆...Factory setting)

	SW4	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

SYSTEM DESIGN

● SW5 setting forbidden

(◆...Factory setting)

	SW5	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

● SW6 setting forbidden

(◆...Factory setting)

	SW6	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

SYSTEM DESIGN

7. OPTIONAL PARTS INSTALLATION

7-1. DRAIN PUMP UNIT

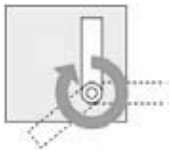
7-1-1. DUCT TYPE

■ MODEL : UTZ-PX1NBA

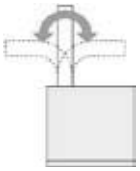
■ SPECIFICATIONS

	Unit	Specifications
Height of drain up	mm	Maximum 1000
Power source	-	220-240V, 50/60Hz
Power input (230V, 50/60Hz)	W	12 / 10.8
Current (230V, 50/60Hz)	mA	114 / 92
Dimensions (H x W x D)	mm	176 x 178 x 154
Weight	kg	2.5
Connection pipe diameter	-	VP25 (I.D.25mm, O.D.32mm)
Direction of pipe connection *1	-	360°
Angle of pipe connection *2	-	0° (Horizontal)-90° (Vertical)
Control method	-	Control board of indoor unit
safety device	-	Float switch, Thermal fuse

*1 : Direction of pipe connection



*2 : Angle of pipe connection

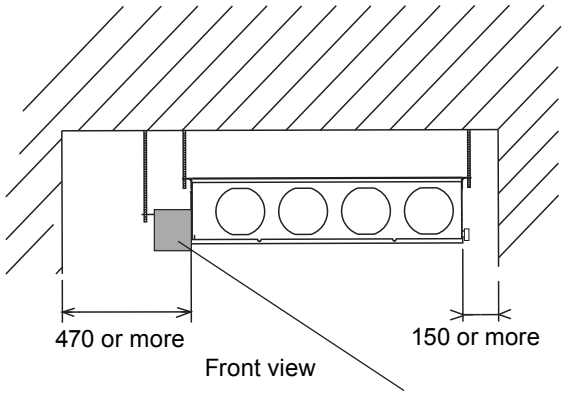


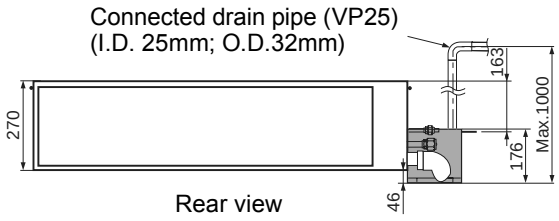
■ APPLICATION INDOOR UNITS

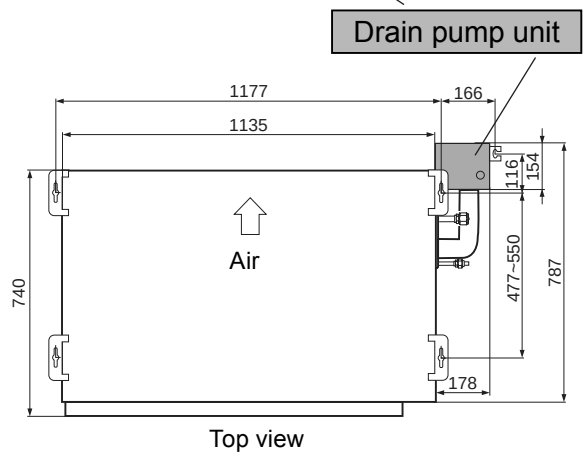
Type	Model name
Duct (Single system)	AR∗G36LM, AR∗G45LM
Duct (Simultaneous multi system)	AR∗G22LM, AR∗G24LM

■ INSTALLATION PLACE

(Unit : mm)



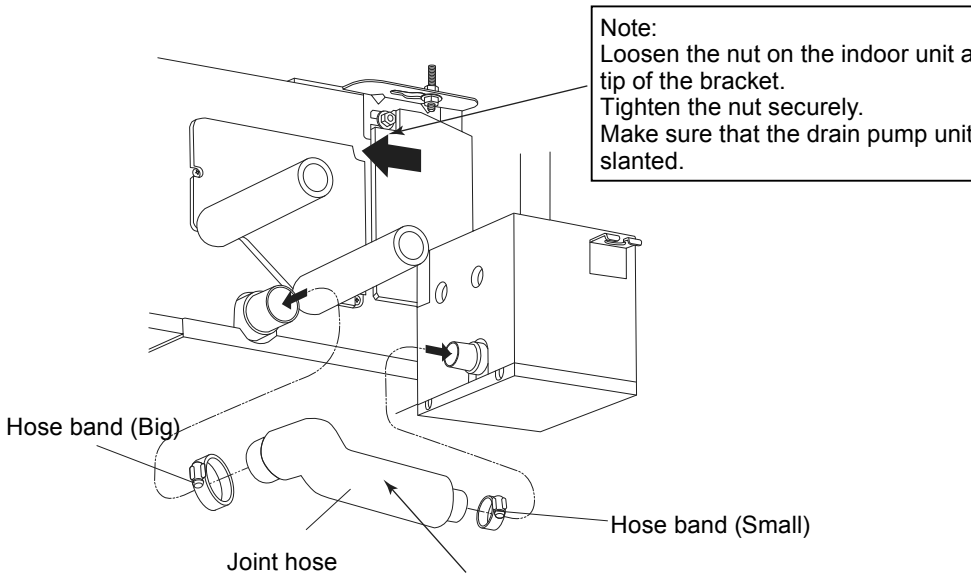


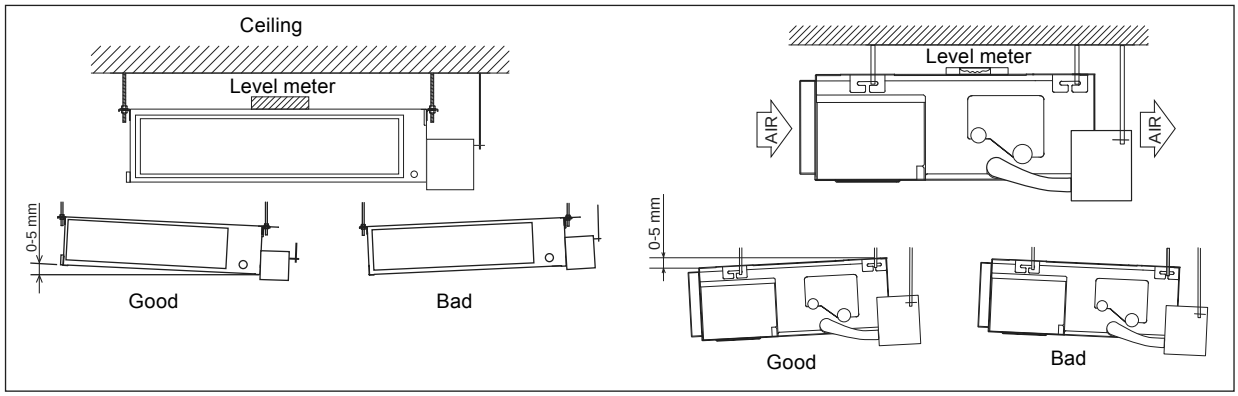


Note:
Leave the space required to service the unit.
Set a maintenance hole near the drain pump unit.

SYSTEM DESIGN

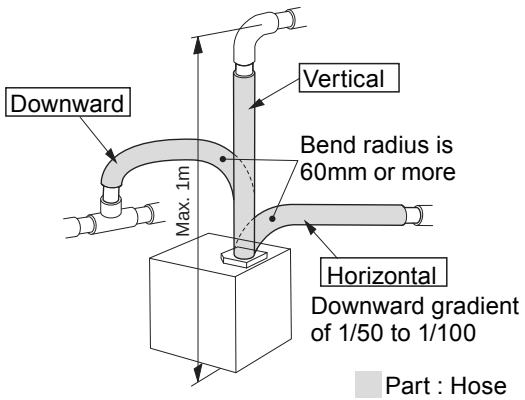
■ INSTALLING DRAIN PUMP UNIT

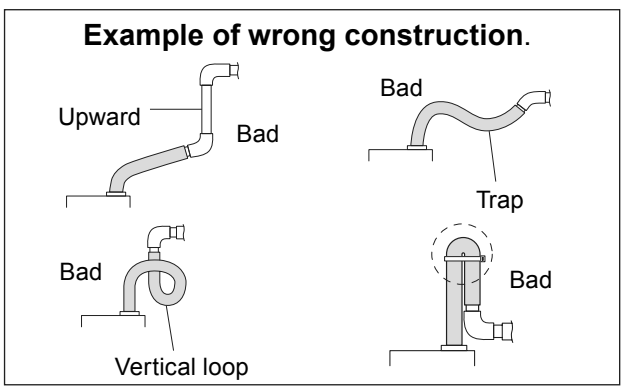

Note:
Loosen the nut on the indoor unit and hook the tip of the bracket.
Tighten the nut securely.
Make sure that the drain pump unit is not slanted.
Hose band (Big)
Hose band (Small)
Joint hose
Thread the hose band through the joint hose and secure to the drain pump unit and indoor unit.



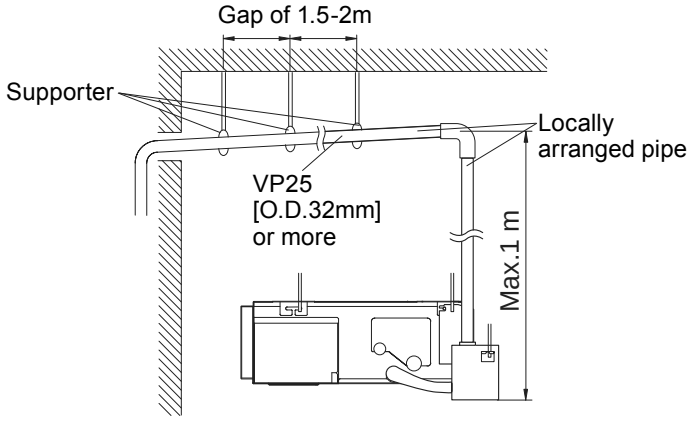
SYSTEM DESIGN

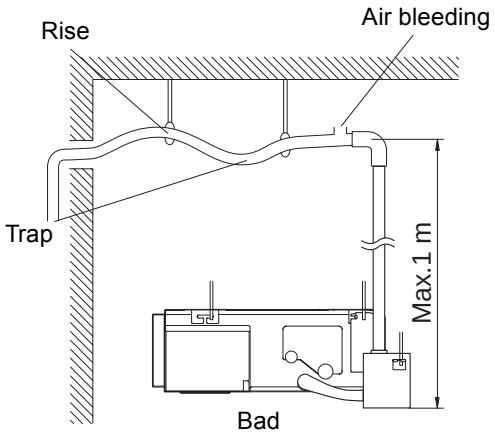
■ INSTALLING HOSE

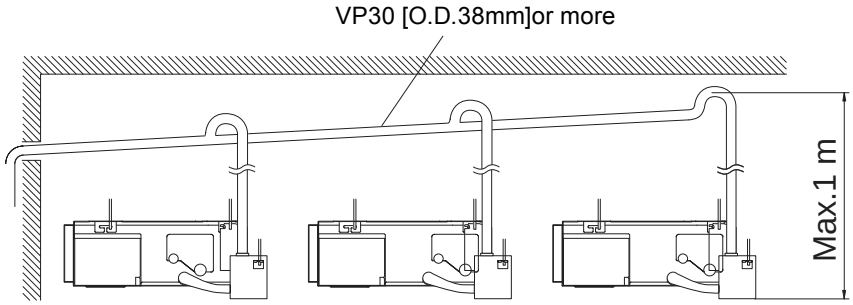




■ INSTALLING PIPE



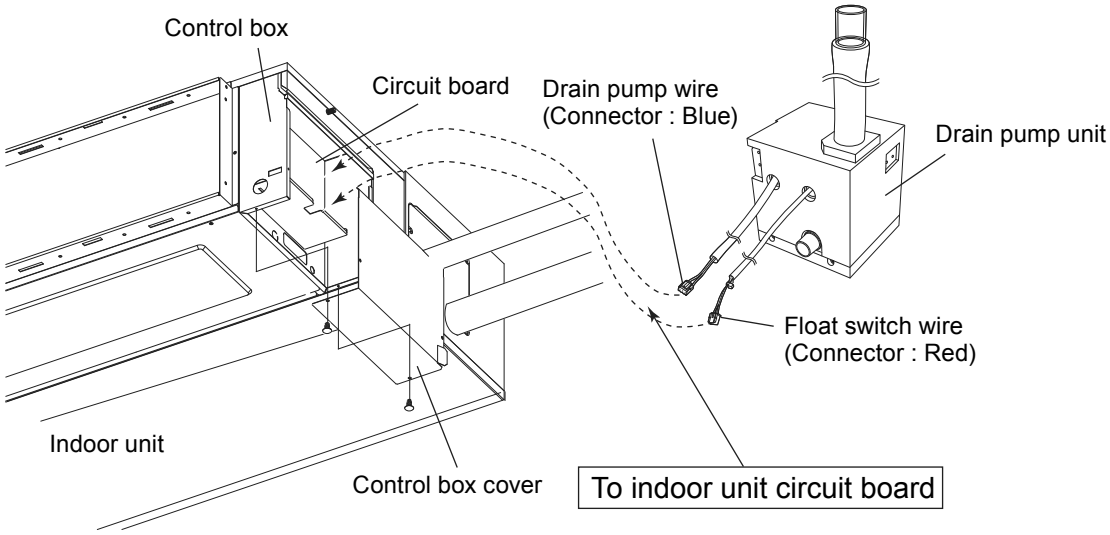




Observe the following procedures to construct centralized drain pipe fittings.

SYSTEM DESIGN

■ ELECTRICAL WIRING



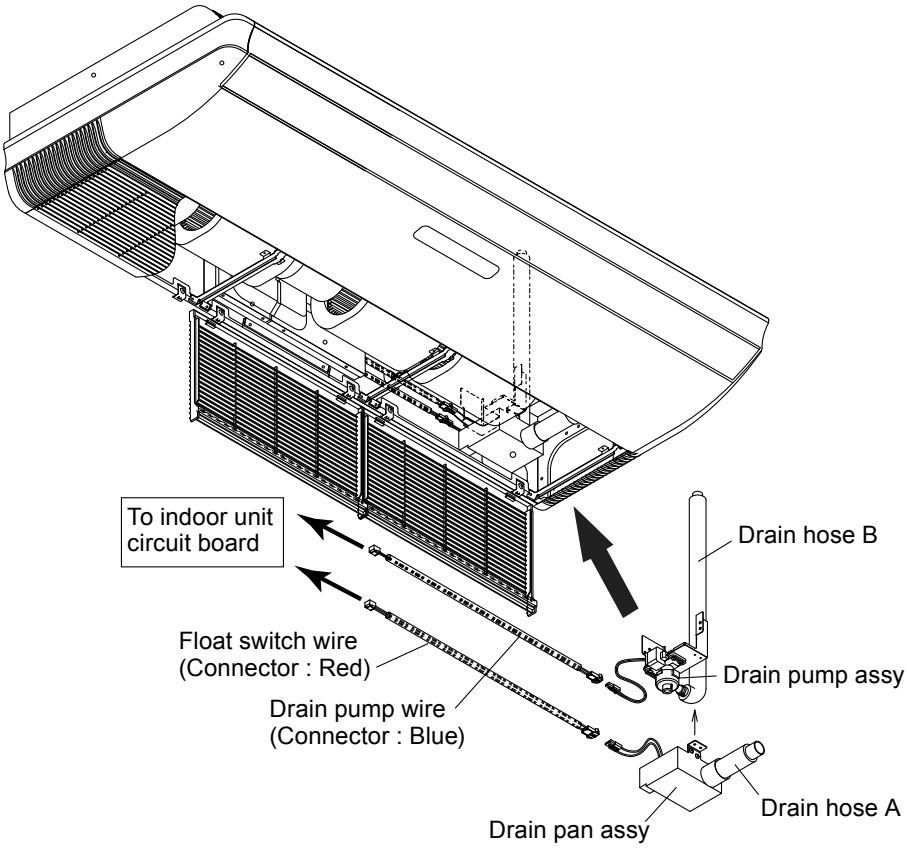
7-1-2. CEILING TYPE

■ MODEL : UTR-DPB24T

■ APPLICATION INDOOR UNITS

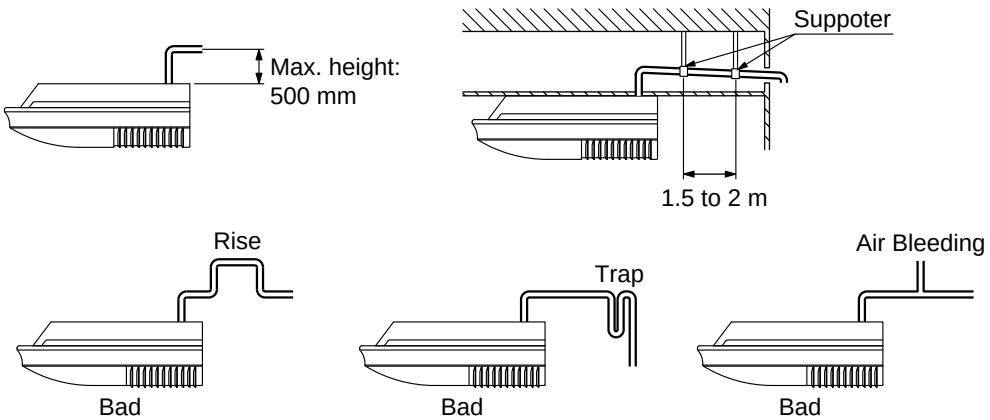
Type	Model name
Ceiling	AB∗G36LR, AB∗G45LR, AB∗G54LR

■ INSTALLING DRAIN PUMP UNIT & ELECTRICAL WIRING



■ INSTALLING PIPE

- Set up the drain hose for a maximum rise 500 mm and give the drain pipe a downward gradient of 1/25 to 1/100.
- Install the drain pipe so there is no rise, trap, or air bleed.



SYSTEM DESIGN

7-2. FRESH AIR INTAKE KIT

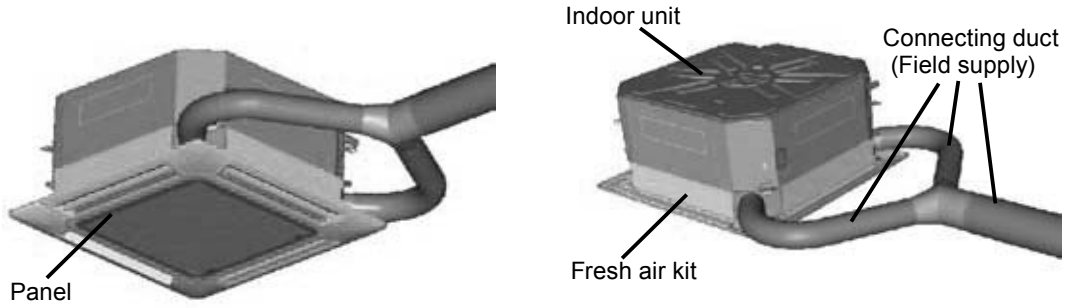
7-2-1. CASSETTE TYPE

■ MODEL : UTZ-VXGA

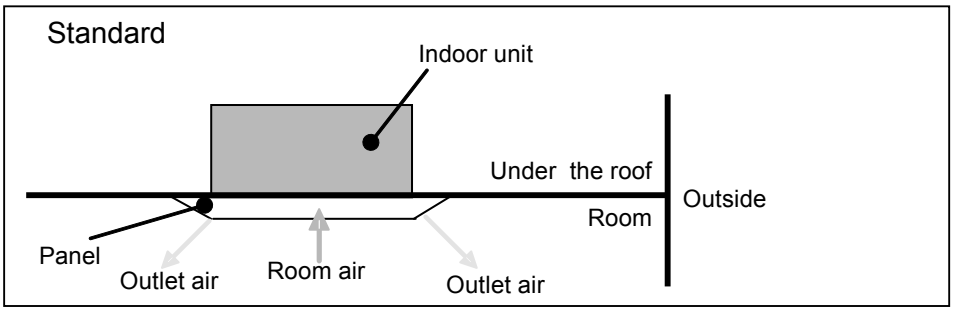
■ FEATURE

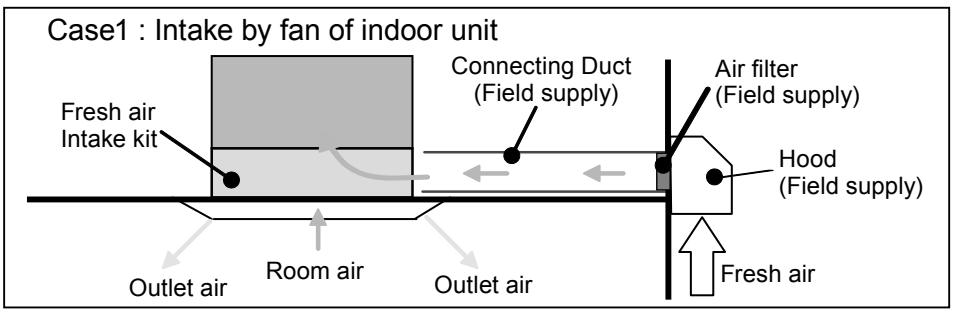
• It can be taken in fresh air of up to 10% of “high” air volume of the indoor unit by attaching Fresh Air Intake Kit to cassette type indoor unit.

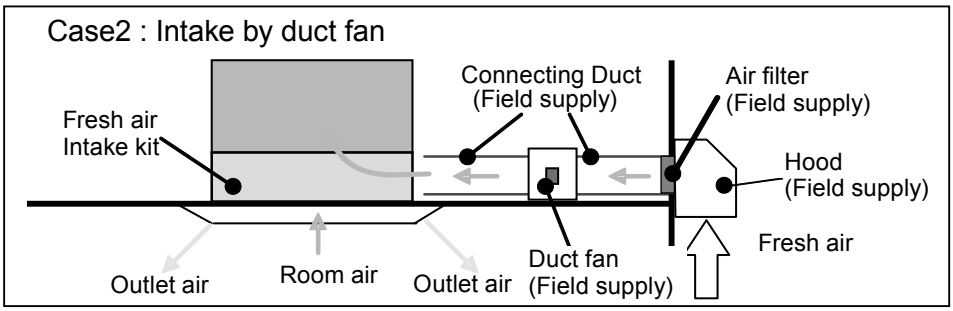
Cassette type attached Fresh Air Intake Kit



■ INSTALLATION EXAMPLE







SYSTEM DESIGN

SYSTEM DESIGN

■ SPECIFICATIONS

Model name				UTZ-VXGA
Fresh air intake	Max. fresh air intake volume	% (for High)	2- way intake	10
			1- way intake	5
Connection duct type		mm		ø 100
		Pcs		2
Dimension (H x W x D)	Net	mm		120 x 840 x 840
	Gross			165 x 860 x 860
Weight	Net	kg		5.5
	Gross			9.0

SYSTEM DESIGN

■ PRECAUTION

● About fresh air intake kit

- The Fresh Air Intake Kit can be installed onto cassette type air conditioners.
- The volume of ventilated air provided by the Fresh Air Intake Kit may be unable to fulfill ventilation regulations in all countries.

  On such occasions we ask that this kit be used along with Energy recovery ventilators.
- When intaking outside air please ensure correct air-conditioning design as based on air-conditioning load calculations.

  As outside air is not being processed an increase in outside air load can affect air conditioning.

● Installation location

- Area that generate substances that adversely affect the equipment, such as sulfuric gas,chlorine gas,add,or alkali it will cause the copper pipes and brazed joints to corrode,which can cause refrigerant leakage.
- Area with high salt content,such as at the seaside. It will deteriorate metal parts, causing the parts to fall or the unit to leak water.
- Be certain to use electric dampers and shutters to avoid infiltration of cold air, wind and fog during shutdown in areas with cold climates, strong winds, or where fogs are common.
- Please ensure the product is installed a distance of at least three times the duct diameter away from exterior wall air inlets, or air exhausts for the prevention of short circuits.

● Temperature conditions

- Condensation may form on the product when outside air temperature is low, and the temperature and humidity surrounding the product are high. Don't intake the air of below 0°C into the fresh air intake kit.
- The upper limit of the product's temperature range should respond to the outdoor temperature range.

● About duct fan

- When installing the duct fan, connect the drive relay (field supplied) and operate with the indoor unit.
- Please ensure the intake air volume is below 10% of the product's air volume HI. When the intaken air volume becomes too large there the operating noise may increase and room temperature detection may be affected.

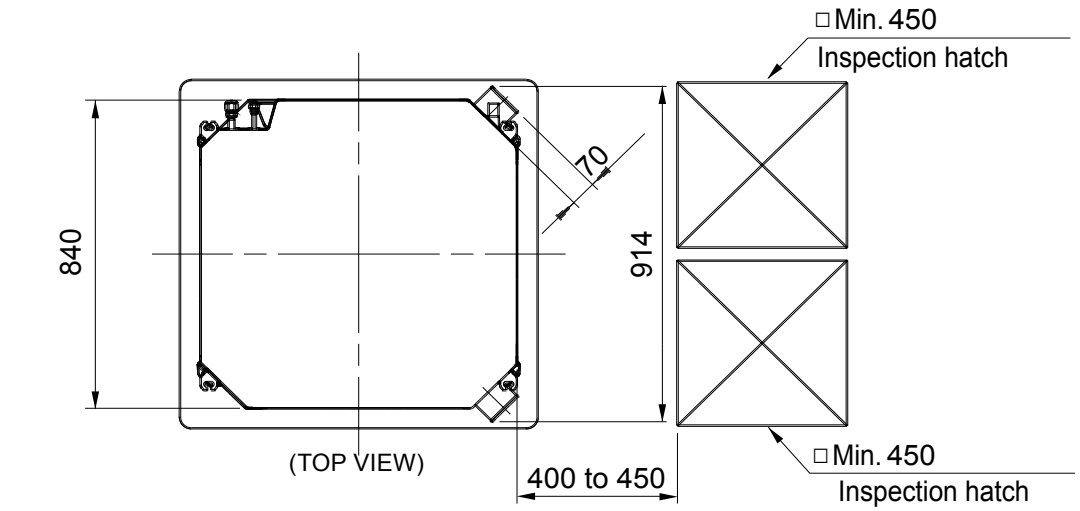
● About the duct connection

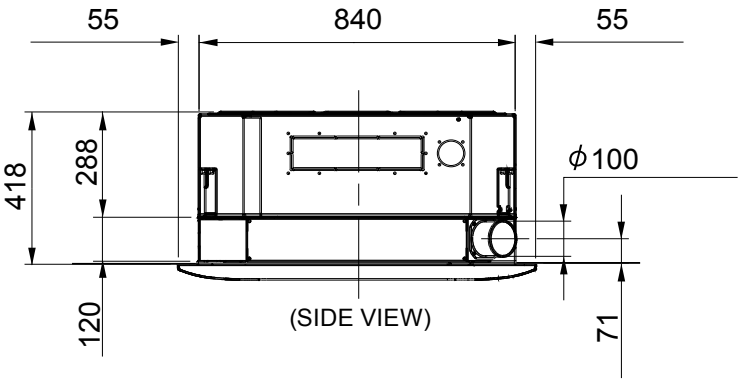
- Procure a duct with internal diameter that fits the external diameter of the duct flange.
- Please note that regulations of some countries may require the use of a nonflammable duct.
- If the duct penetrates a fire-retarding division or other fire-proofing measures, the installation of fire dampers, or a construction that does not adversely affect fire control measures is a regulatory requirement of some countries.
- When using metallic ducts please ensure metals (i.e., metal lath, wire lath, stainless sheeting) are electrically insulated. (A short occurring by electrical connection can cause fire)
- Please ensure to thermally insulate connected ducts to prevent condensation.
- Please make certain that netting or other measures are installed in parts exposed to the outside air to prevent infiltration of small animals such as birds and insects.
- Please be certain to install external air filters to parts exposed to the outside air for heat exchanger protection of indoor equipment.
- Please avoid the infiltration of rain water by installing outside ducts with an incline of at least 1/30, and fitting hoods on openings.

SYSTEM DESIGN

■ DIMENSIONS

Unit : mm

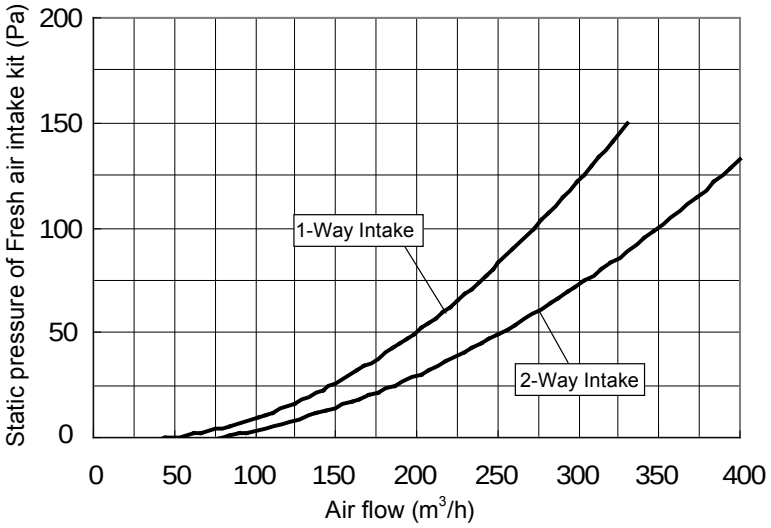




- When installing this kit, inspection hatch is necessary. (It is necessary when servicing.) Either one of inspection hatches must be installed.

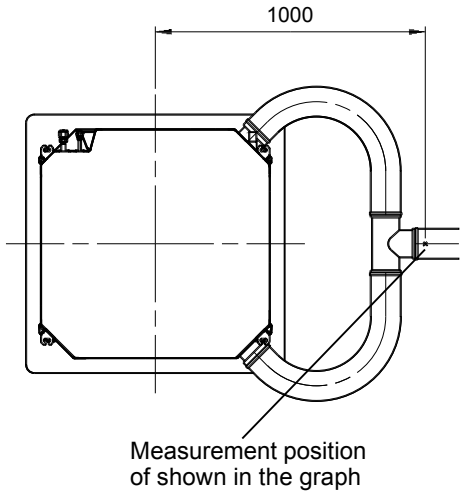
SYSTEM DESIGN

■ AIR FLOW

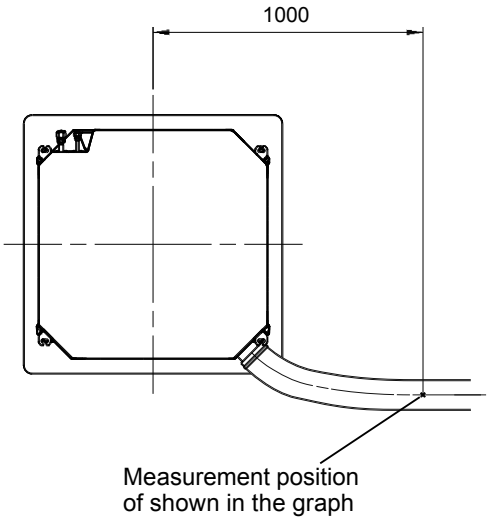


Unit : mm

for 2-Way Intake



for 1-Way Intake



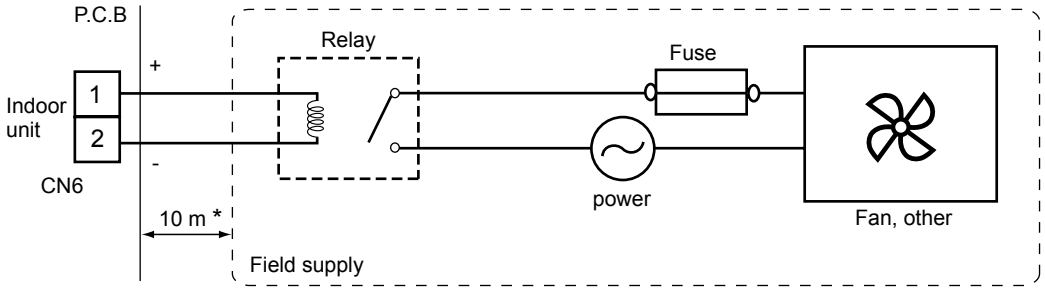
SYSTEM DESIGN

■ FRESH AIR CONTROL OUTPUT

- You can control duct fan by synchronization with fan operation of indoor unit.
- Wire for fresh air control output is supplied with Fresh Air Intake Kit.
- Extended length of the wire : Max. 10m

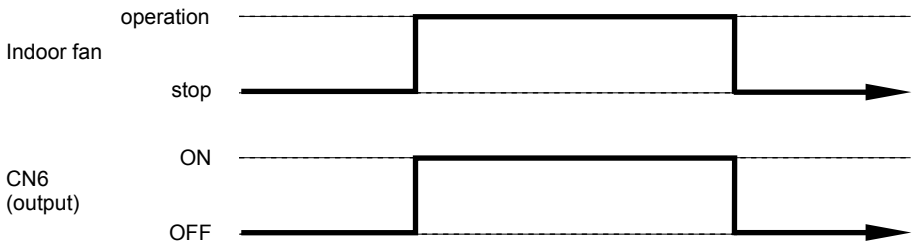
● Connection diagram

- For Relay Output voltage : DC12V
  Permissible current : 15mA



* : Make the distance from the PC board to the Relay Unit within 10 m

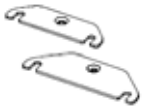
● Indoor unit status

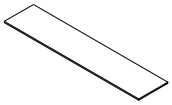


Wire (External output ①)

SYSTEM DESIGN

■ ACCESSORY PARTS

Name and shape	Q'ty	Application
Installation manual	1	
Duct Flange	2	Air joint for connecting duct
Cover	2	Protective cover to prevent surface condensation
Screw	16	For Attaching duct flange For Attaching Cover
Hook plate 	4	Plate for attaching panel
Shutter plate	1	Shutter plate for 1-way intake
Insulation ①	2	Affixing the insulation outside of the kit
Insulation ②	1	Affixing the insulation to tube of drain pump for prevent condensation

Name and shape	Q'ty	Application
Insulation ③ 	3	Affixing the insulation outside of the kit
Insulation ④	4	Affixing the insulation outside of the cover
Cable tie	1	Fixing tube of drain pump
Extension wire for louver	2	Extension wire for louver
Extension wire for receiver kit	1	Extension wire for receiver kit
Wire (External output ①)	1	For connect indoor unit to relay of duct fan
Wire (External output ②)	1	For connect indoor unit to relay of duct fan
Bolt	4	For attaching the kit to indoor unit

SYSTEM DESIGN

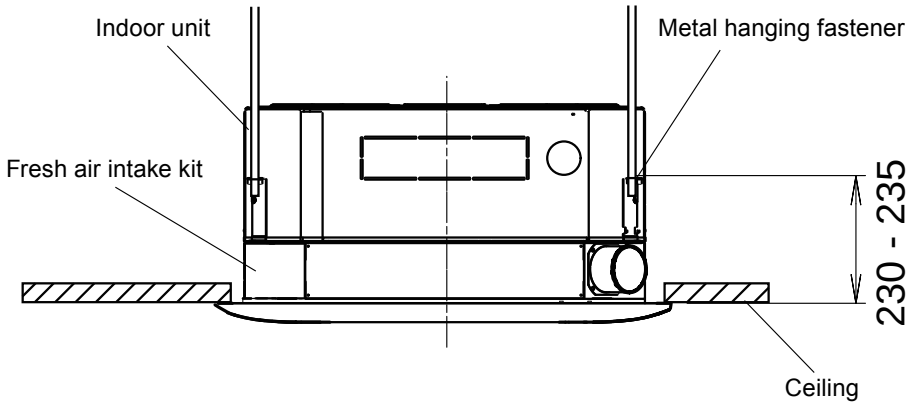
SYSTEM DESIGN

■ INSTALLATION

● Mounting of indoor unit

- Please refer to the installation manual provided with the indoor unit for mounting.
- Please refer to the diagram below for installation height.
- When installing this product to existing indoor units, please adjust the installation height of the indoor units to height 230-235mm.

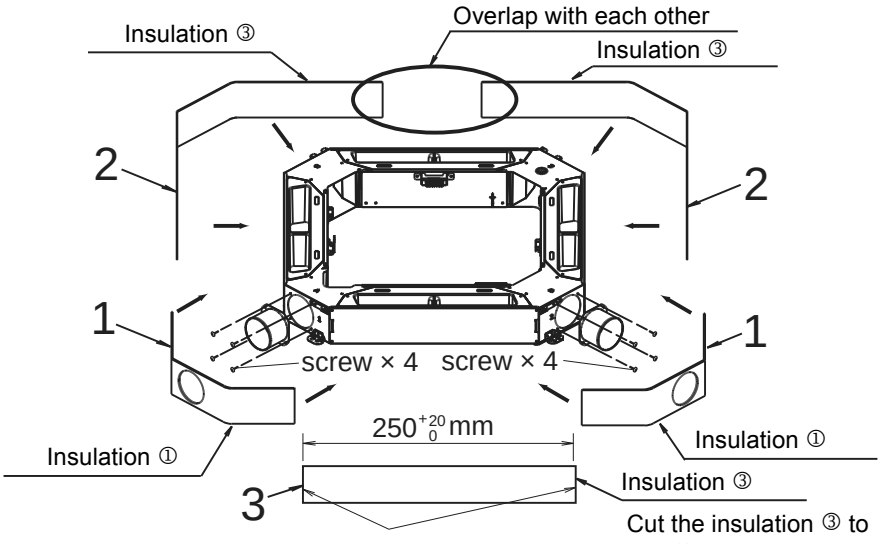
(Unit : mm)



● Pre-installation preparations

- Please attach the duct flange provided with screws.
- The Fresh Air Intake Kit can be used with an external air intake on just one side. Use included sealed plate to apply for different eye holes.
- Please apply Insulation ① to the installed duct flange parts (Do not apply to sealed areas).

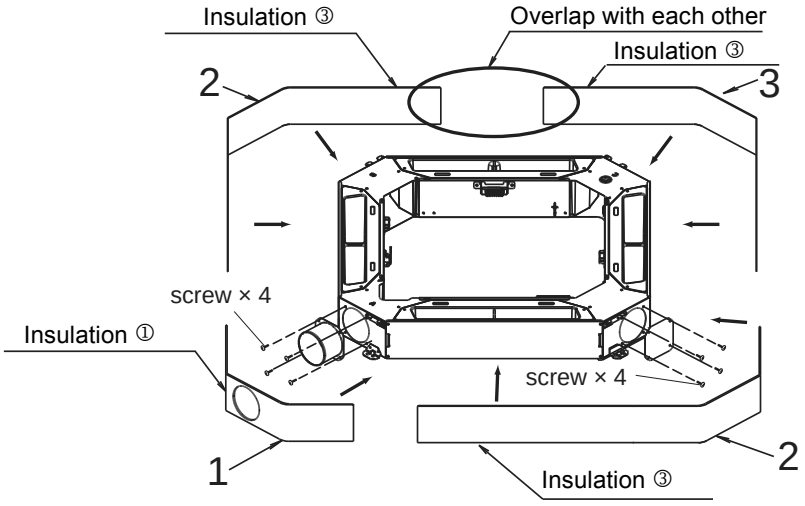
[When taking in the air in two sides]
Please paste the insulation in the order shown in the figure below.



When pasting, make sure that there is no gap between the INSULATION ② (overlap is allowed)

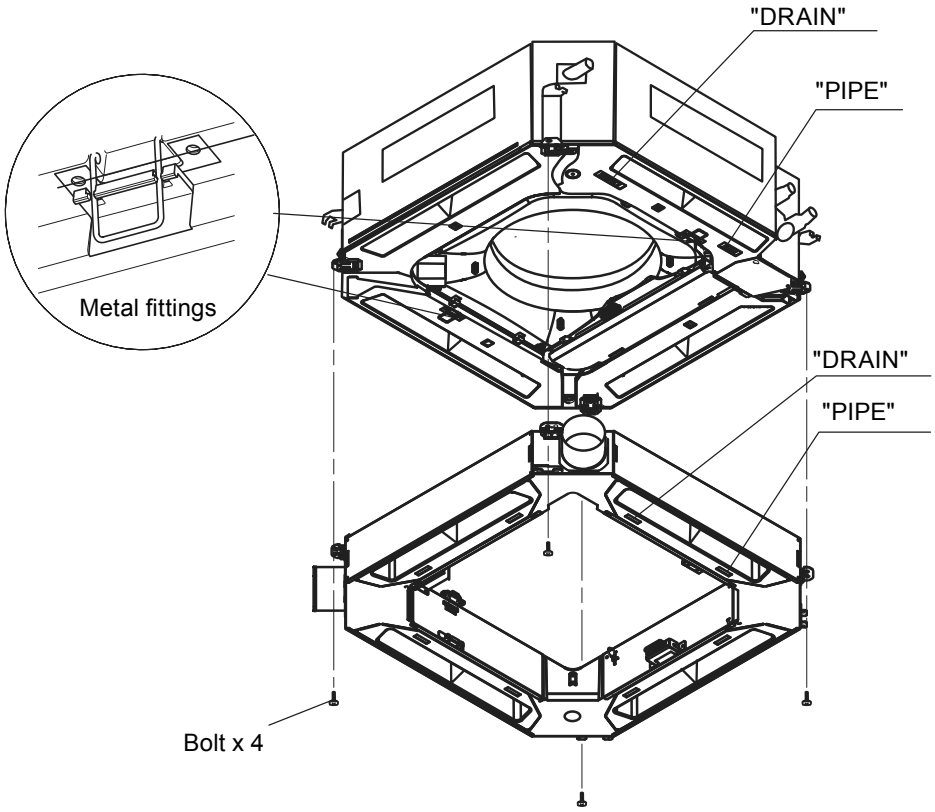
SYSTEM DESIGN

[When taking in the air in one side]
Please paste the insulation in the order shown in the figure below.



●Attaching the fresh air intake kit

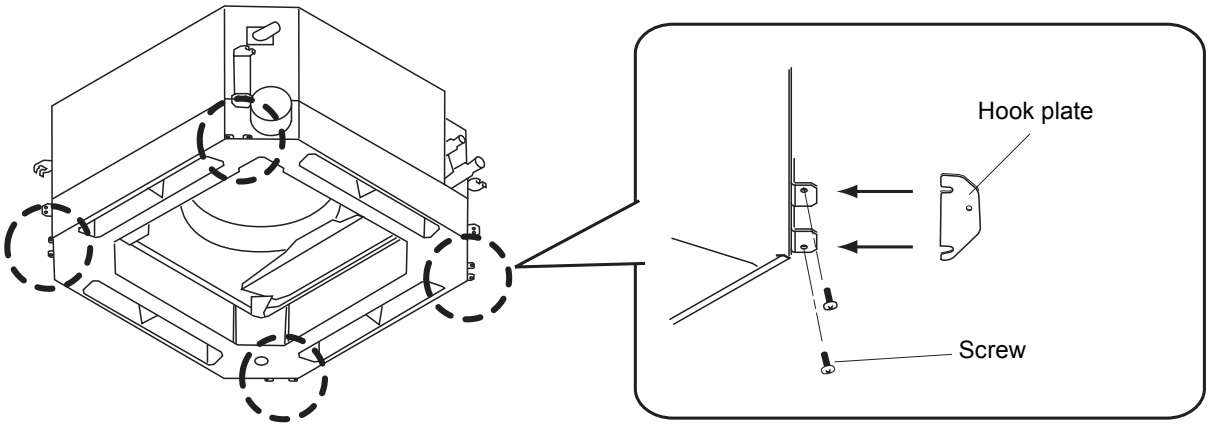
Attach the Fresh Air Intake Kit to the main body using the bolts provided.



SYSTEM DESIGN

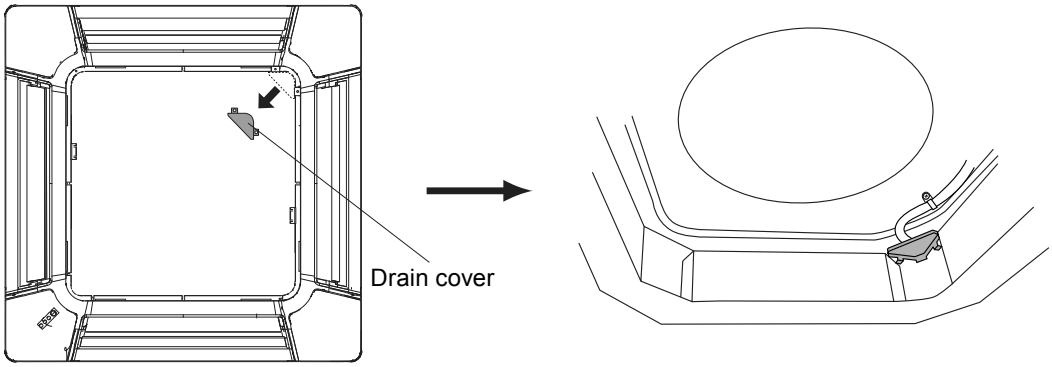
● Attaching the hook plate

Attach the Hook Plate by each corner of the Fresh Air Intake Kit.
(The attaching screws are attached to the body of the Fresh Air Intake Kit and must be loosened before installing)

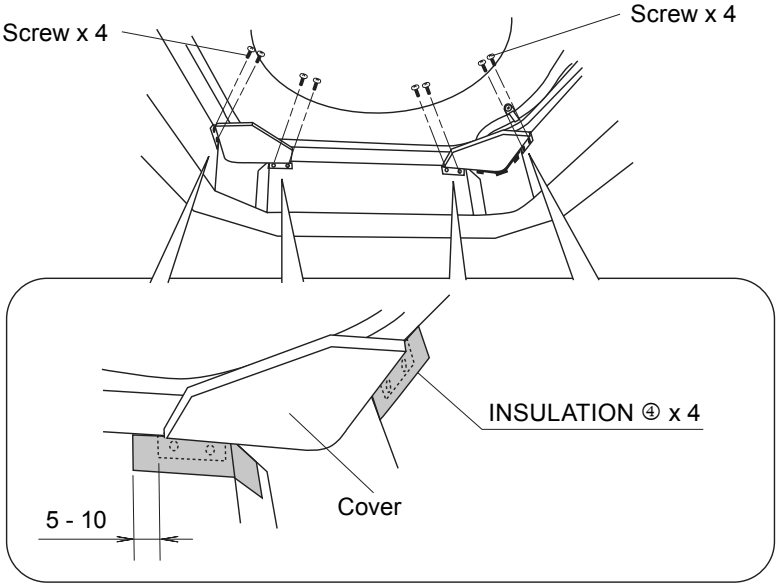


● Cover installation

(1) Remove the drain cover attached to the decorative panel and install onto the Fresh Air Intake Kit.



(2) Set the cover in position with screws(2 places) as shown in the diagram. Apply the INSULATION ④ after installing the cover.



SYSTEM DESIGN

● Duct installation

(1) Please fasten the connecting parts of the ducts with bands, and wrap with vinyl tape to ensure no air leaks.
(Carry out the work to ensure no air leakage at a pressure of 200 Pa)

• Please do not construct the duct in the manner of below.

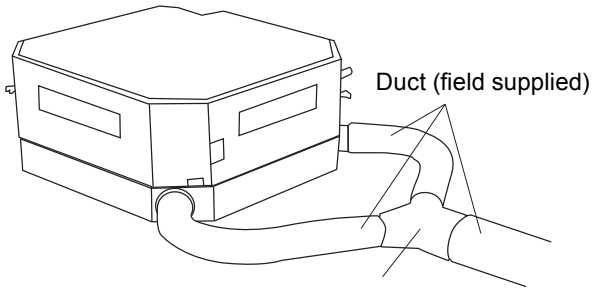
○Extreme Bends

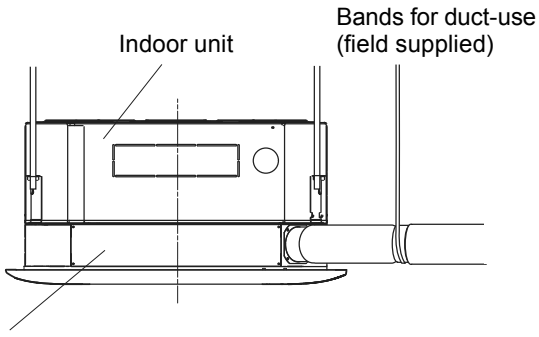
○Highly Repetitive Bends

○Making the Connecting Duct Diameters Smaller

(2) When using T-shaped pipe, suspend the kit with suspension bands for duct-use to avoid unnecessary load bearing.

[Completion figure]



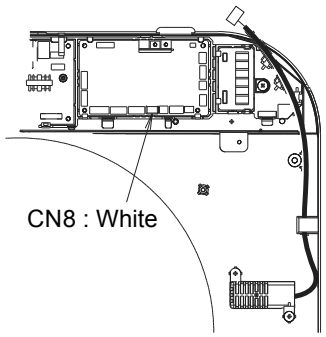


When wiring of the duct fan is required please refer to "■FRESH AIR CONTROL OUTPUT".

● Pre-installation (Decoration panel) preparations

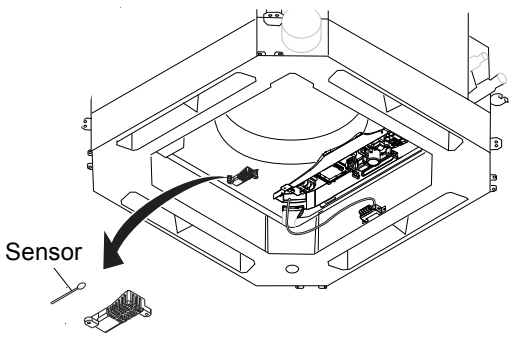
(1) Please remove the control box cover.

(2) Remove the connecter from the existing temperature sensor, found on the circuit board of the indoor unit.



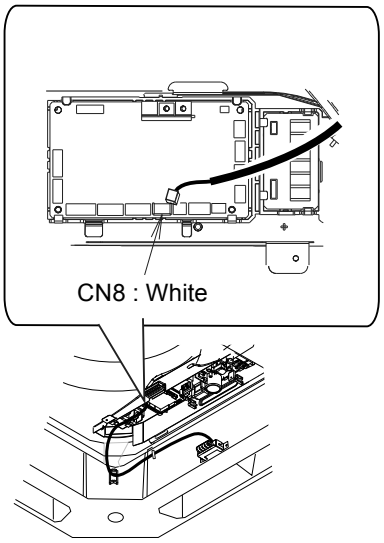
(3) The existing temperature sensor will not be used so remove it from the sensor holder, and once more install the empty sensor holder (without sensor) in the control box.

⚠CAUTION
Please make sure to install the sensor holder inside the control box, as it is a fire hazard. Otherwise, it may cause fire.



SYSTEM DESIGN

(4) Insert the connector of the sensor attached to the Fresh Air Intake Kit onto the substrate board of the indoor unit.



(5) Insert the included extension cable for use with louver to the connector.

(6) When using the optical receiver unit (option) please insert the included extension wire to the indoor unit.

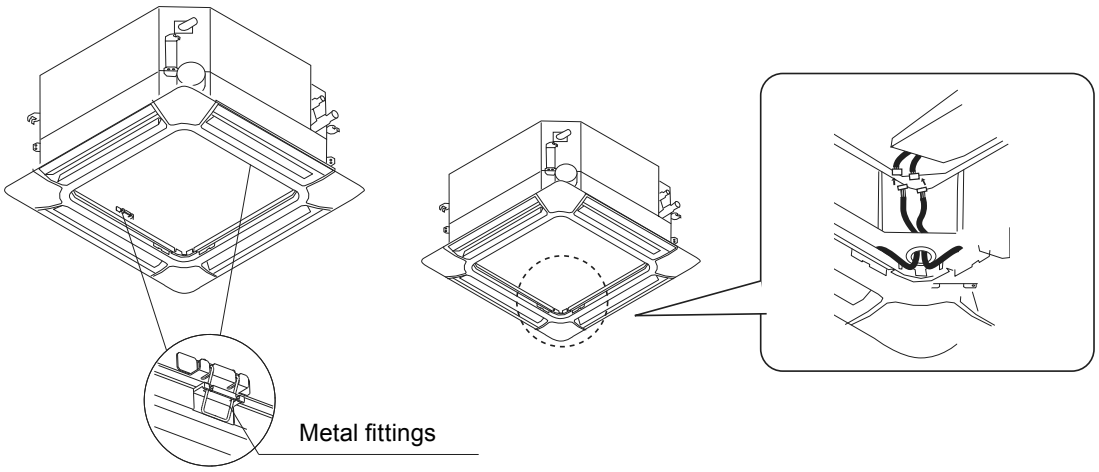
(7) Close the control box cover when work is complete.

● Installation of decoration panel

(1) After provisional fixing of a decoration panel, feed the louver extension wire (and optical receiver extension wire) through the penetrating hole.

(2) Connect to the connector wires coming out of the decoration panel.

(3) Please install decoration panel according to the installation instruction sheet provided.



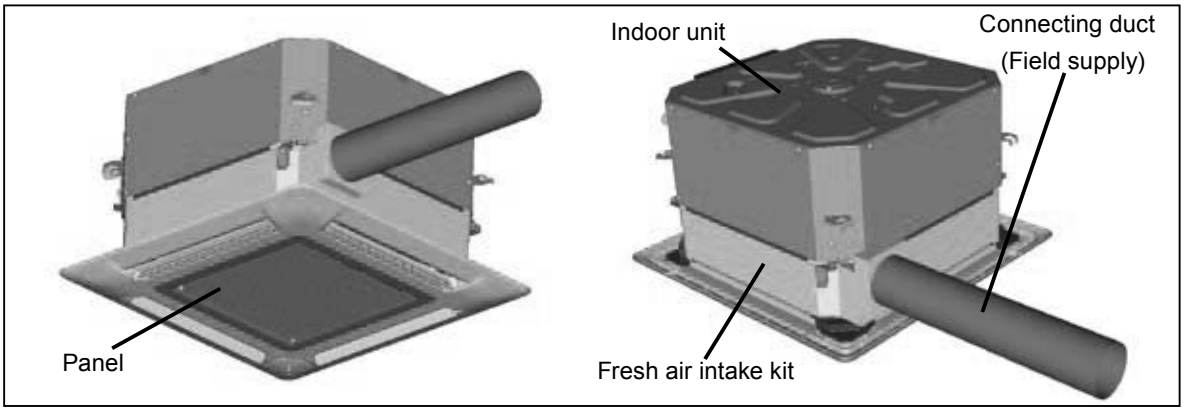
SYSTEM DESIGN

7-2-2. COMPACT CASSETTE TYPE

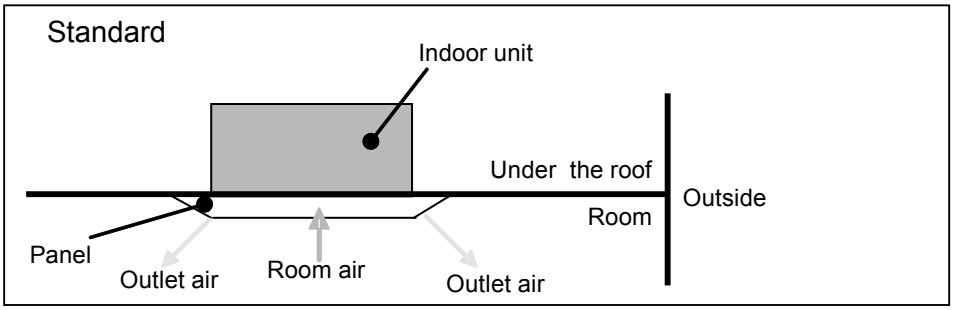
■ MODEL : UTZ-VXAA

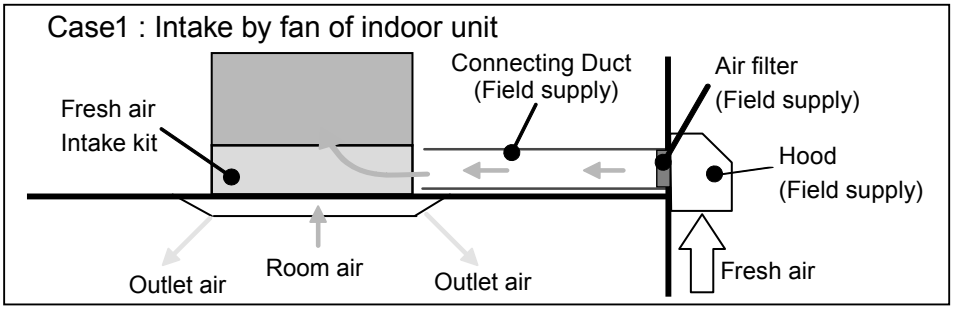
■ FEATURE

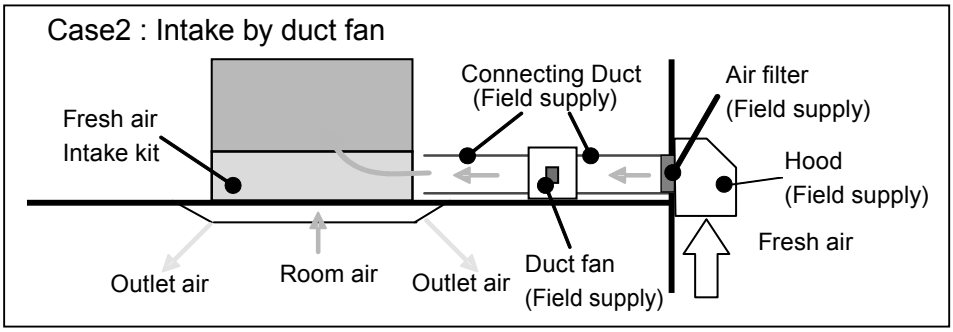
• It can be taken in fresh air of up to 10% of “high” air volume of the indoor unit by attaching Fresh Air Intake Kit to cassette type indoor unit.



■ INSTALLATION EXAMPLE







SYSTEM DESIGN

SYSTEM DESIGN

■ SPECIFICATIONS

Model name				UTZ-VXAA
Fresh air intake	Max. fresh air intake volume		% (for High)	10
Connection duct type			mm	ø 100
			Pcs	1
Dimension (H x W x D)		Net	mm	120 x 570 x 570
		Gross		165 x 585 x 585
Weight		Net	kg	3.5
		Gross		5.5

SYSTEM DESIGN

■ PRECAUTION

● About fresh air intake kit

- The Fresh Air Intake Kit can be installed onto cassette type air conditioners.
- The volume of ventilated air provided by the Fresh Air Intake Kit may be unable to fulfill ventilation regulations in all countries.

  On such occasions we ask that this kit be used along with Energy recovery ventilators.
- When intaking outside air please ensure correct air-conditioning design as based on air-conditioning load calculations.

  As outside air is not being processed an increase in outside air load can affect air conditioning.

● Installation location

- Area that generate substances that adversely affect the equipment, such as sulfuric gas,chlorine gas,add,or alkali it will cause the copper pipes and brazed joints to corrode,which can cause refrigerant leakage.
- Area with high salt content,such as at the seaside. It will deteriorate metal parts, causing the parts to fall or the unit to leak water.
- Be certain to use electric dampers and shutters to avoid infiltration of cold air, wind and fog during shutdown in areas with cold climates, strong winds, or where fogs are common.
- Please ensure the product is installed a distance of at least three times the duct diameter away from exterior wall air inlets, or air exhausts for the prevention of short circuits.

● Temperature conditions

- Condensation may form on the product when outside air temperature is low, and the temperature and humidity surrounding the product are high. Don't intake the air of below 0°C into the fresh air intake kit.
- The upper limit of the product's temperature range should respond to the outdoor temperature range.

● About duct fan

- When installing the duct fan, connect the drive relay (field supplied) and operate with the indoor unit.
- Please ensure the intake air volume is below 10% of the product's air volume HI. When the intaken air volume becomes too large there the operating noise may increase and room temperature detection may be affected.

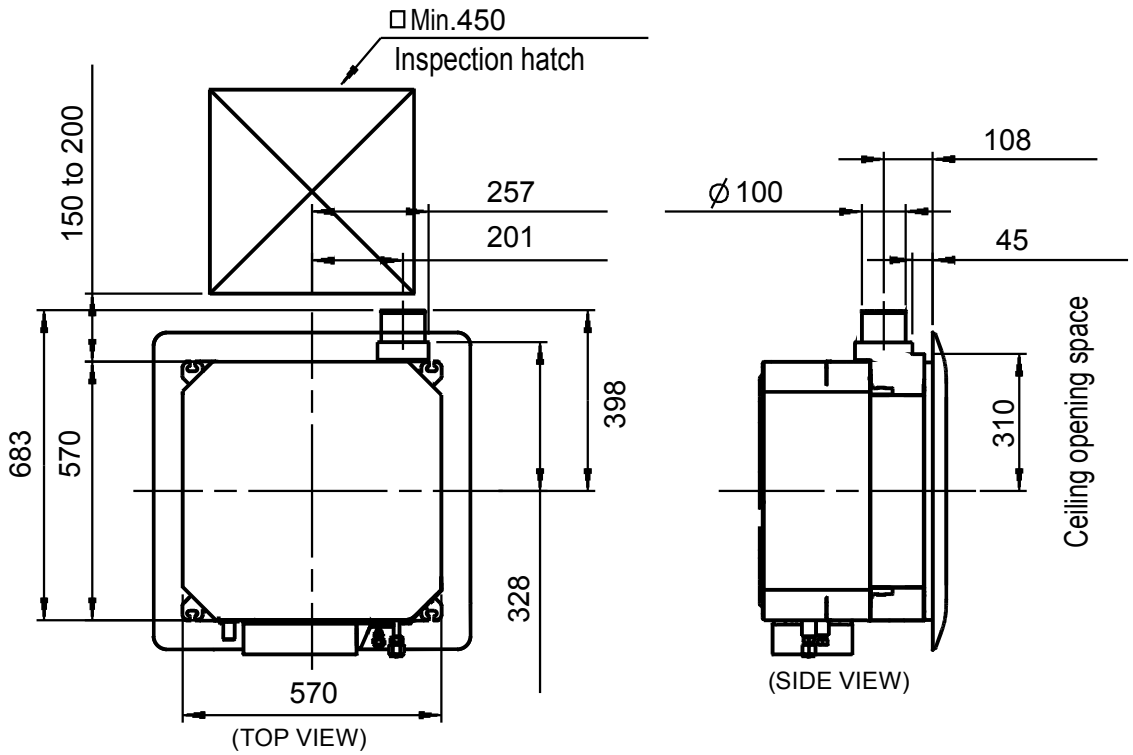
● About the duct connection

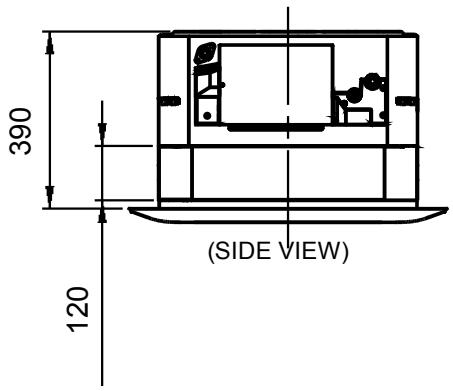
- Procure a duct with internal diameter that fits the external diameter of the duct flange.
- Please note that regulations of some countries may require the use of a nonflammable duct.
- If the duct penetrates a fire-retarding division or other fire-proofing measures, the installation of fire dampers, or a construction that does not adversely affect fire control measures is a regulatory requirement of some countries.
- When using metallic ducts please ensure metals (i.e., metal lath, wire lath, stainless sheeting) are electrically insulated. (A short occurring by electrical connection can cause fire)
- Please ensure to thermally insulate connected ducts to prevent condensation.
- Please make certain that netting or other measures are installed in parts exposed to the outside air to prevent infiltration of small animals such as birds and insects.
- Please be certain to install external air filters to parts exposed to the outside air for heat exchanger protection of indoor equipment.
- Please avoid the infiltration of rain water by installing outside ducts with an incline of at least 1/30, and fitting hoods on openings.

SYSTEM DESIGN

■ DIMENSIONS

Unit : mm



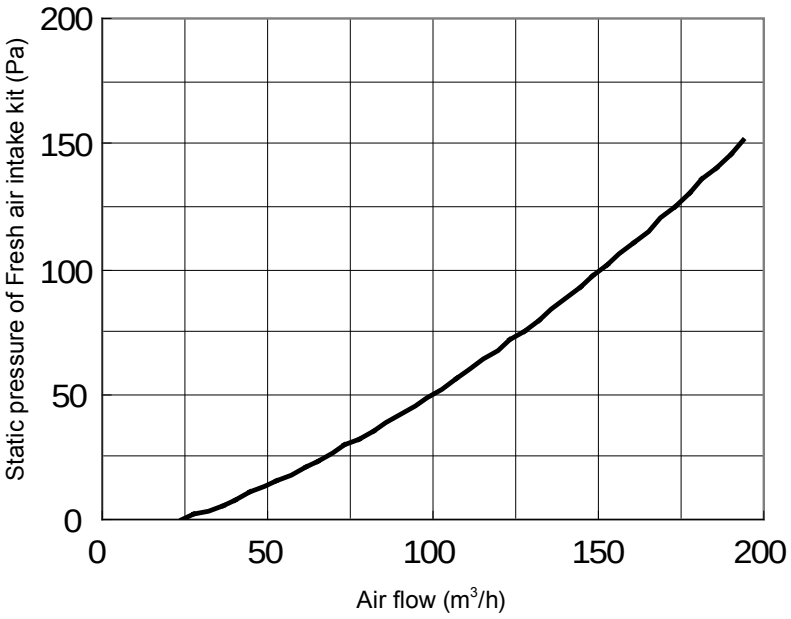


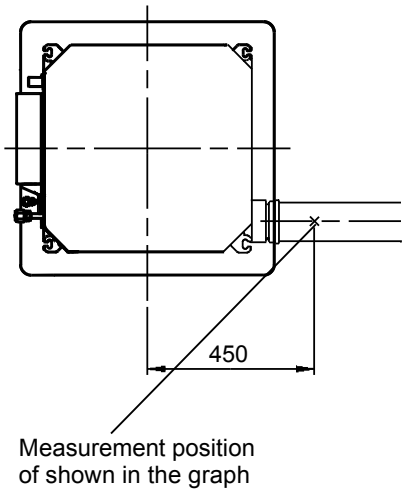
• When installing this kit, inspection hatch is necessary. (It is necessary when servicing.)

SYSTEM DESIGN

■ AIR FLOW

Unit : mm





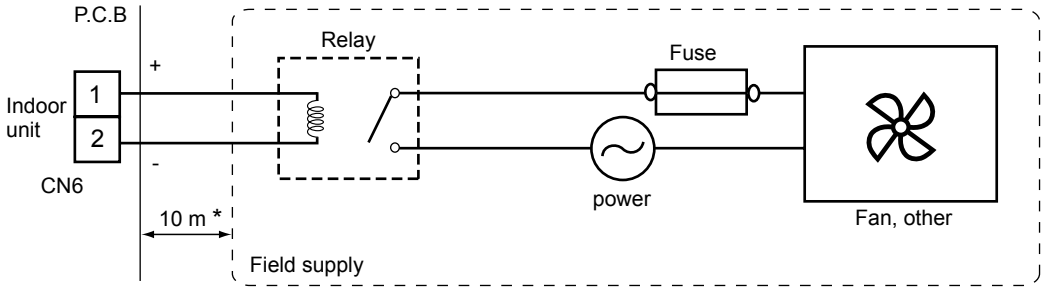
SYSTEM DESIGN

■ FRESH AIR CONTROL OUTPUT

- You can control duct fan by synchronization with fan operation of indoor unit.
- Wire for fresh air control output is supplied with Fresh Air Intake Kit.
- Extended length of the wire : Max. 10m

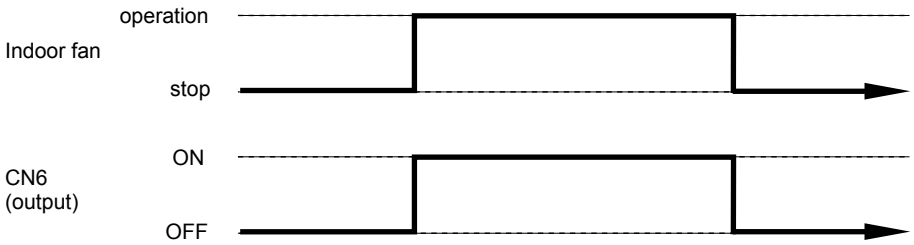
● Connection diagram

- For Relay Output voltage : DC12V
  Permissible current : 15mA



* : Make the distance from the PC board to the Relay Unit within 10 m

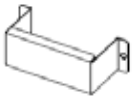
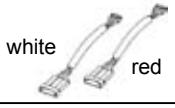
● Indoor unit status



● Wire (External output ①)

SYSTEM DESIGN

■ ACCESSORY PARTS

Name and shape	Q'ty	Application
Installation manual	1	
Chamber	1	Air joint for connection duct
Wire cover 	1	Cover for extension wire
Screw	4	Attaching for chamber Attaching for wire cover
Extension wire for louver 	2	Extension wire for louver

Name and shape	Q'ty	Application
Extension wire for receiver kit	1	Extension wire for receiving kit
Wire (External output ①)	1	For connect indoor unit to relay of duct fan (For single or multi)
Wire (External output ②)	1	For connect indoor unit to relay of duct fan (For VRF)
Bolt	4	For attaching kit to indoor unit
Cable tie	1	For fixing wire

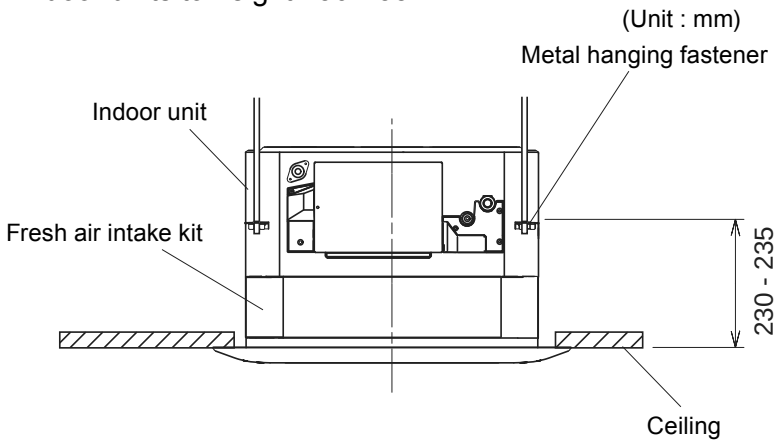
SYSTEM DESIGN

SYSTEM DESIGN

■ INSTALLATION

● Mounting of indoor unit

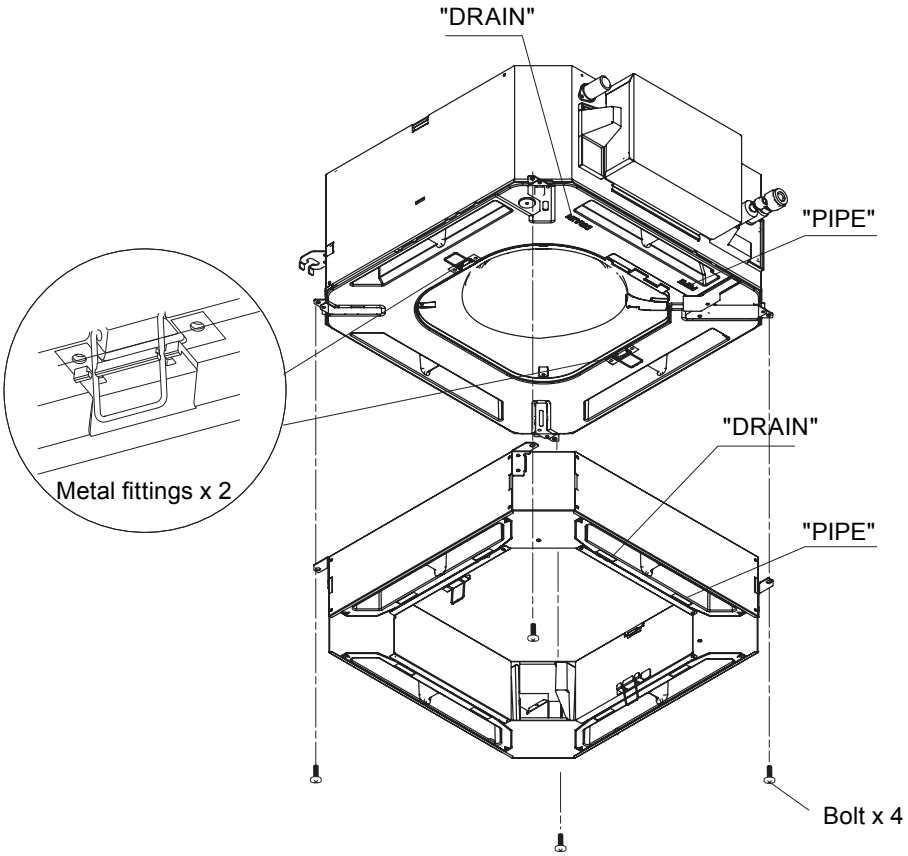
- Please refer to the installation manual provided with the indoor unit for mounting.
- Please refer to the diagram below for installation height.
- When installing this product to existing indoor units, please adjust the installation height of the indoor units to height 230-235mm.



● Installation of the fresh air intake kit

⚠CAUTION
Installing the Fresh Air Intake Kit with the wrong direction is a cause of water leakage.

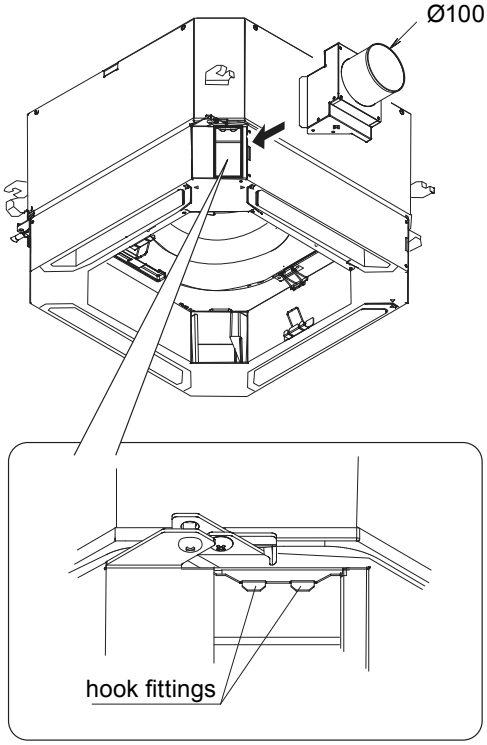
- Provisionally attach the “DRAIN”, “PIPE” of the Fresh Air Intake Kit to the indoor unit foam-sealed “DRAIN”, “PIPE”, following the direction of the indoor unit, using the metal fittings of the combined diagram.

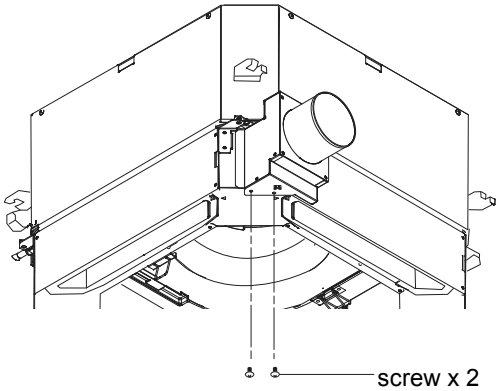


SYSTEM DESIGN

● Chamber installation

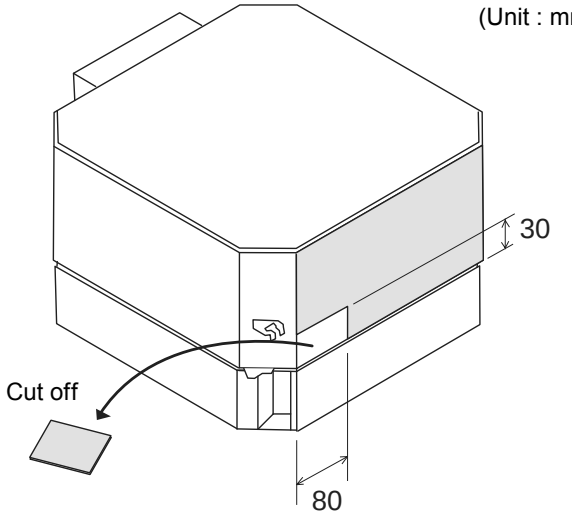
Fit the four-sided holes of the chamber together with the hook fittings of the Fresh Air Intake Kit (in two places), and secure the attached chamber in place with screws provided.





- When using the “UTZ-KXGC” kit for high humidity, please first cut off and remove the heat insulation as shown in the figure.
- Please install the kit for high humidity according to the installation instruction sheet provided.

(Unit : mm)



SYSTEM DESIGN

● Duct installation

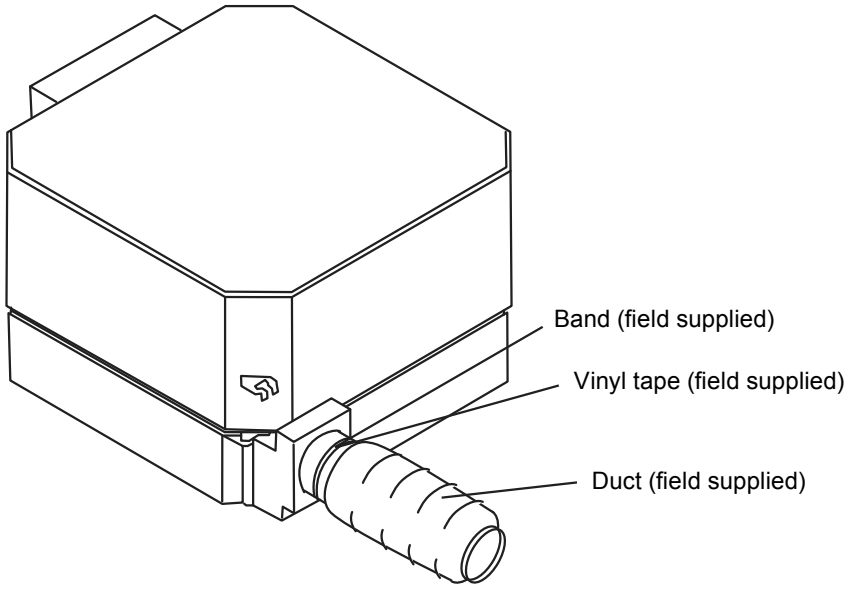
- Please fasten the connecting parts of the ducts with band, and wrap with vinyl tape to ensure no air leaks. (Carry out the work to ensure no air leakage at a pressure of 200 Pa)
- Please do not construct the duct in the manner of below.

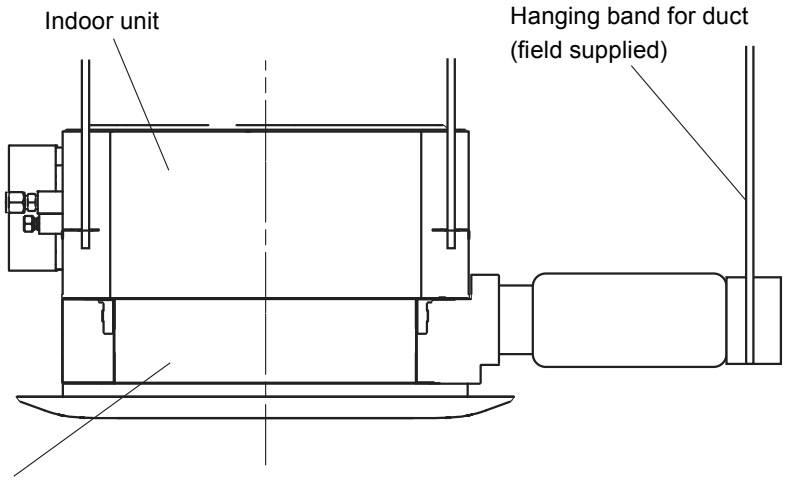
○Extreme Bends

○Highly Repetitive Bends

○Making the Connecting Duct Diameters Smaller

Completion figure





When wiring of the duct fan is required please refer to "■FRESH AIR CONTROL OUTPUT".

SYSTEM DESIGN

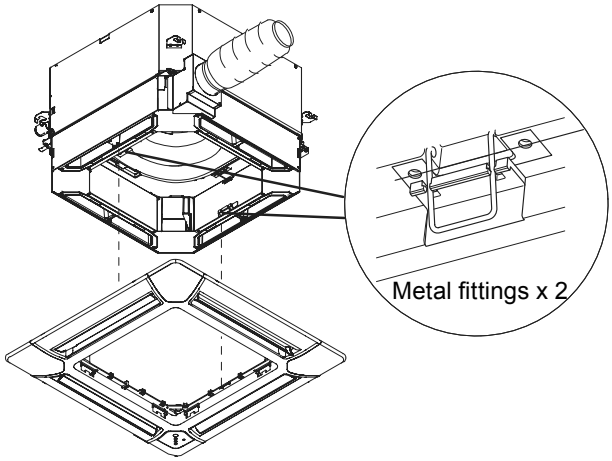
● Installation of decoration panel

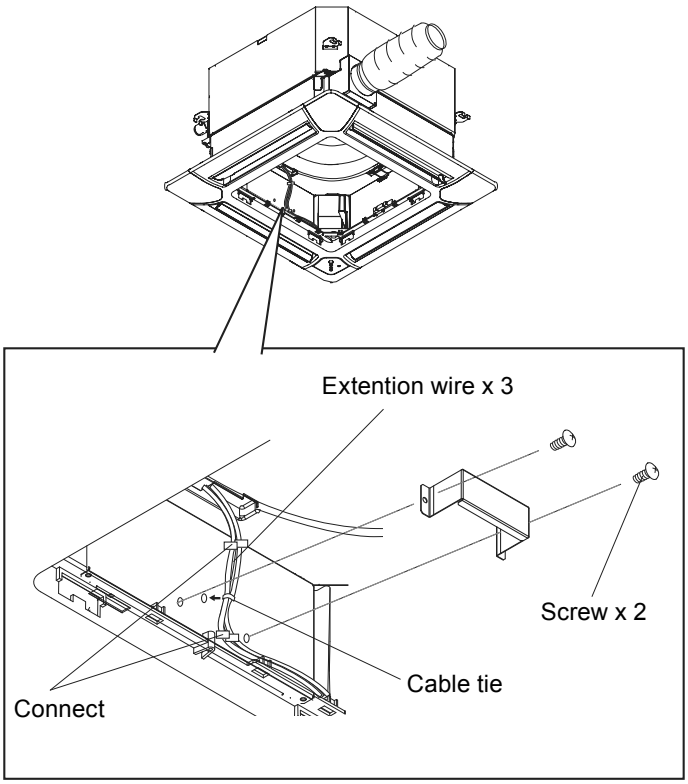
(1) Please connect extension wires for use with louvers, or extension wire for optical receiver after provisional attaching of the decoration panel.

(2) Tie the wires together with the fasteners provided and insert into the hole of the Fresh Air Intake Kit.

(3) Install the wire-cover provided on the Fresh Air Intake Kit.

(4) Please install decoration panel according to the installation instruction sheet provided.





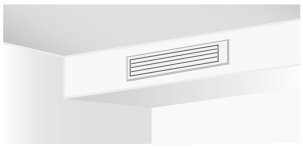
SYSTEM DESIGN

7-3. AUTO LOUVER GRILLE KIT

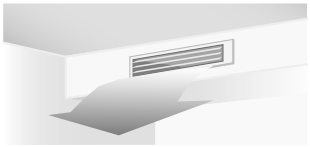
■ MODEL : UTD-GXSB-W

■ FEATURE

Simple flat Auto Louver will provide comfort airflow and harmonize with luxury interior.



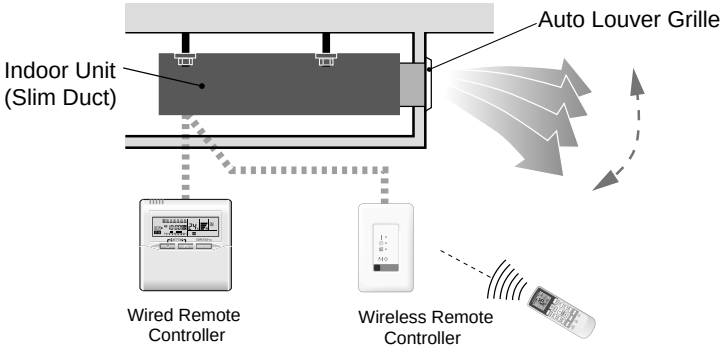
Closed louver
[Operation is stopped.]



Opened louver
[During operation]

SYSTEM DESIGN

● Flexible control



★*Operation with Indoor Unit*

Auto Louver can be operated by synchronizing remote controller of Indoor Unit.

★*UP and Down auto swing*

- Auto airflow direction and auto swing
- 4 steps selectable

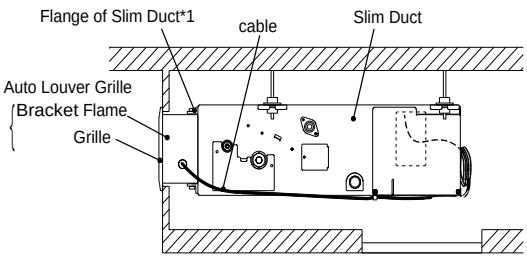
★*Auto-closing louver*

When operation of Indoor Unit is stopped, the louver will automatically close.

● Flexible installation

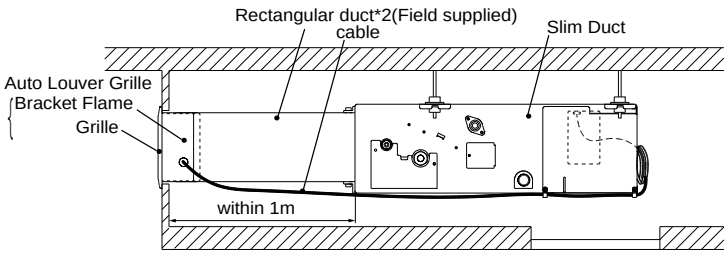
Auto Louver Grille can be connected either directly with indoor unit or through the rectangular duct.

(a) Direct connection to flange



*1 : Attachment is not necessary.

(b) Connection with rectangular duct



*2 : Length of connecting duct must be within 1m

■ SPECIFICATIONS

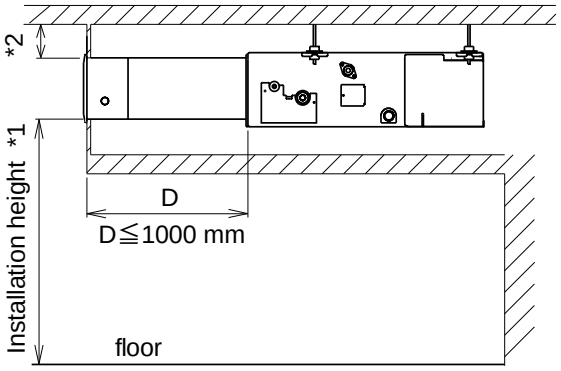
Model name			UTD-GXSB-W
Power Supply			Connecting with Control box of indoor unit
Fixing of Auto Louver Grille			Screw fixing to Flange or Rectangular duct
Extension Square Duct Limit			1.0m (Max. duct length between indoor unit and Grille)
Net Dimension (H x W x D)		mm	180 x 883 x (84+9)
Weight	Net	kg	2.5
	Gross		3.5
Color			White
Louver Motor			Stepping Motor
Material			Flame retardant ABS
Accessories			Fitting Flame, etc.
Operation range	Cooling	°C	18 to 32
		% RH	80% or less
	Heating	°C	16 to 30

SYSTEM DESIGN

■ PRECAUTION

●Select the installation location that meets the following requirement and that is approved by the customer.

• Cold and warm air should reach the entire room.



*1) Refer to Design & Technical manual for Air velocity distribution and Air temperature distribution during heating.

*2) If the distance from the ceiling is not adequate, it may cause mildew stains on the wall or the ceiling. (Ensure to fix at least 150 mm away from any surface of the equipment.)

●Do not install the unit in the following areas

• The upper part of the vicinity of room entrance. It may cause condensation on the outlet port.
• Near a wall surface. It may cause condensation on the wall during cooling.
• Area filled with mineral oil or containing a large amount of splashed oil or steam, such as a kitchen.
• The place where it will be exposed to direct sunlight. Or else, it may cause a change in color.

●When the installation area is exposed to direct sunlight, take measures to block the light such as covering the grille surface with a sheet. Or else, it may cause a change in color.

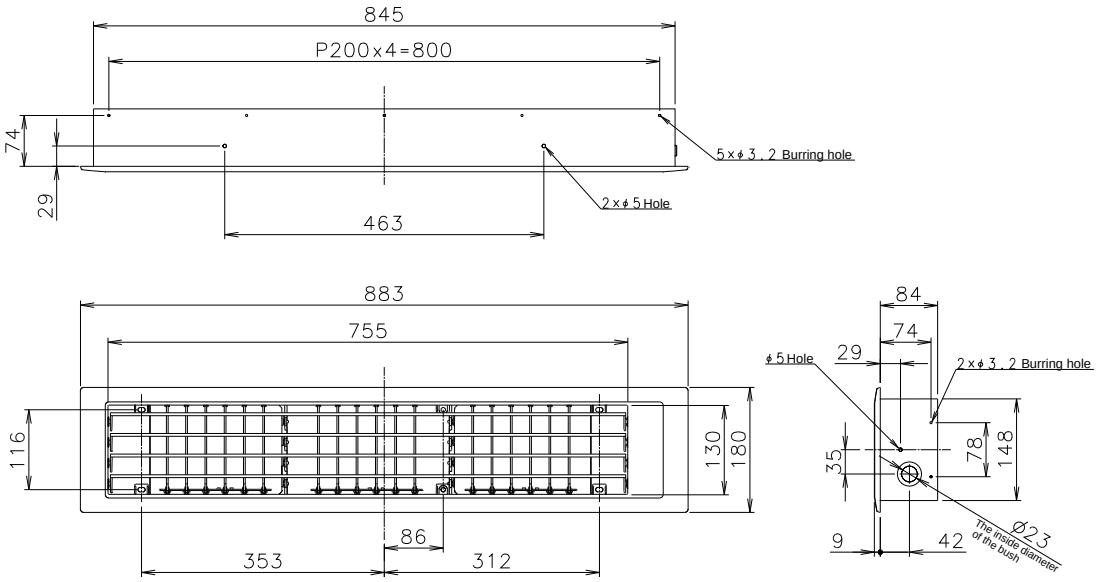
●Use an appropriate Grille that is compatible with the indoor unit. If not used with the correct combination, it may cause condensation.

●Perform heat insulation and field setting according the Design & Technical manual of Indoor unit. Not installing as per the instructions may cause condensation.

SYSTEM DESIGN

■ DIMENSIONS

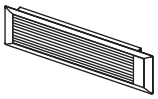
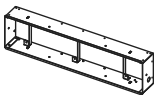
● MODEL : UTD-GXSB-W



SYSTEM DESIGN

SYSTEM DESIGN

■ ACCESSORY PARTS

Name and shape	Q'ty
Installation manual	1
Operating manual	1
Grille 	1
Bracket frame 	1

Name and shape	Q'ty
Screw-A	16
Screw-B	6
Cable clip	2
Cable tie	3
Bushing	1

SYSTEM DESIGN

8. INSTALLATION PRECAUTIONS

8-1. INDOOR UNIT INSTALLATION PRECAUTIONS

Note: The information listed below are general precautions.
Some models also include items that do not apply.

■ PLACES WHERE USE PROHIBITED

- •Places where there is the danger of combustible gas leakage.
- •Places where sulfur gas, chlorine gas, acid, alkali, or other matter which effects equipment is generated
- •Places where there is a lot of oil splash and steam (kitchen, machinery room, etc.)
- •Places where machinery which generates high frequencies is used
- •Ocean beaches and other areas where there is a lot of salt
- •Places where carbon fibers and metal powder, powder, etc. suspended in the air
- •Installation in vehicles, ships, and other conveyances
- •Factory, etc. where voltage fluctuations are large

■ POINTS TO REMEMBER WHEN INSTALLING

(1) The set shall be installed at a place which can withstand the weight and vibration of the indoor unit

(2) To allow maintenance after refrigerant piping, drain piping, and electric wiring connection and installation, provide an installation service space and an inspection port, as required.

*Installation service space is shown on " DIMENSIONS ".

(3) Be careful when installing the set at the following places.

[Installation precautions]

	Contents	Countermeasures (Reference)
When the ceiling is high	If the indoor unit is installed where the installation height given in the installation manual is exceeded, the temperature difference between the floor and ceiling of the room will be large and the heating effect will be poor. Moreover, even if the indoor unit is installed within the installation height, a similar phenomena will occur when installed in a room in which the doors are opened and closed frequently and hot air circulation is obstructed by desks, chairs, etc.	(1) Switch the setting to the high ceiling mode. (2) Install a circulator. (3)Arrange the furniture in the room so that it does not obstruct the hot air.
When lower level directly contacts the outside air.	When the lower level of the shop and office is a warehouse, parking lot, etc., the surface temperature of the flooring will become low and the radiation of cold from the floor will increase. In this case, your feet will feel cold even if the room temperature is suitable.	
When the air flow distribution is poor	When an indoor unit is installed in a position where the outlet air flow will directly contact people, a draft may be felt. In addition, when there are obstructions in the path of the intake and outlet air flow, the air distribution may become extremely bad.	(1) Adjust the louver fins or take other measures matched to the site. (2)Change the indoor unit outlet.

SYSTEM DESIGN

[Installation precautions]

	Contents	Countermeasures (Reference)
When inside the ceiling is high temperature and high humidity	When the indoor unit is installed where the inside of the ceiling is 30°C (86°F) RH80% or greater, the dew point temperature of the outer perimeter may become higher than the cabinet surface temperature and moisture will condense on the surface of the cabinet and water drops may fall inside the room. →Refer to Fig.A In addition, the humidity may vary considerably the same as when the inside of the ceiling is close to hermetically sealed and used as the outside air intake path.	(1) Add heat insulating material to the outside of the indoor unit cabinet. *Regarding the cassette type, use of the "high humidity correspondence kit (option)" is recommended. (2) Strengthen the heat insulating material of the refrigerant piping and drain piping also →Refer to Fig.B (3) When the humidity inside the ceiling changes considerably, install a ventilation port

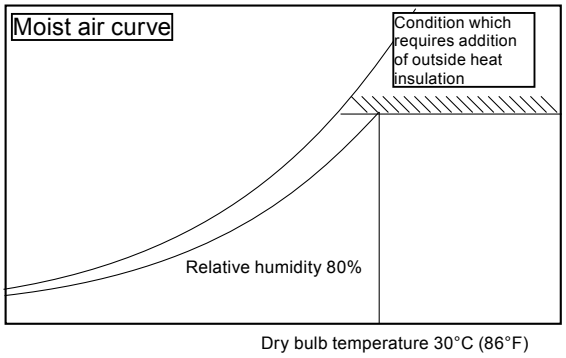

Moist air curve
Condition which requires addition of outside heat insulation
Relative humidity 80%
Dry bulb temperature 30°C (86°F)

Fig.A

Work method when reinforcing the heat insulation of on-site piping

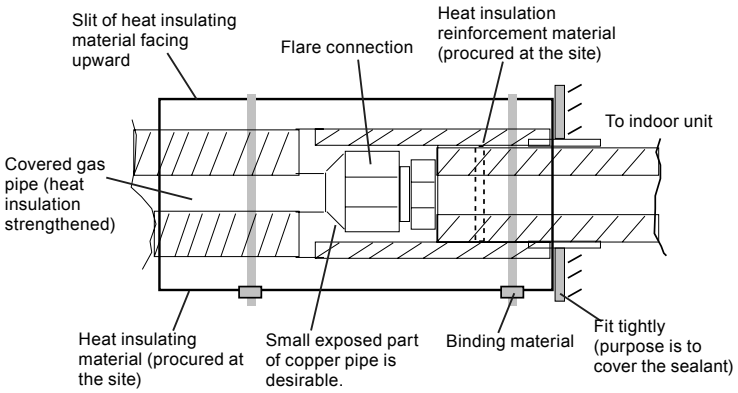

Slit of heat insulating material facing upward
Flare connection
Heat insulation reinforcement material (procured at the site)
To indoor unit
Covered gas pipe (heat insulation strengthened)
Heat insulating material (procured at the site)
Small exposed part of copper pipe is desirable.
Binding material
Fit tightly (purpose is to cover the sealant)

Fig.B

	Contents	Countermeasures (Reference)
When using an external duct	When using an external duct to take in new fresh air, etc., condensation may form on the surface of the duct due to the effect of the outside air temperature and the humidity inside the ceiling.	(1) Always perform heat insulation processing. (Heat insulating material: Glass wool 25mm (31/32 in.) thick or more.)
When the remote controller installation site is bad	If the cold or warm air blown out from the air conditioner directly contacts the thermostat section of the remote controller, the outlet temperature of the air conditioner may be sensed and room temperature control will be different from the room temperature and "not cooled" or "not heated" or other trouble may occur. In addition, there is the possbility that the same kind of trouble may also occur when the remote controller is effected by direct sunlight.	(1) Install the remote controller where it will not be directly exposed to the cold or hot air. (2) Install the remote controller where it will not be directly exposed to sunlight or strong lighting

SYSTEM DESIGN

[Installation precautions]

	Contents	Countermeasures (Reference)
When installation environment is quiet	When the wall mounting type was installed in a bedroom, living room, or other quiet place, the sound of the refrigerant flow may be sensed as noise and must be taken into accunt.	(1) Plan installation of a model with external expansion valve. (2) Plan installation of a branch box farther from indoor unit. (3) Plan installation using another air conditioner.
When installing duct type in ceiling chamber system	In the case of the ceiling chamber system (duct is not installed at indoor unit inlet side and room air is sucked into the indoor unit through the inside of the ceiling), the thermistor inside the indoor unit may not correctly detect the room temperature. Heating operation: Room is not heated because the indoor unit is easily turned off by the thermostat. Cooling operation: Room is too cold because the indoor unit is difficult to turn off by the thermostat.	(1) Replace the indoor unit thermistor with a Remote sensor unit (optional parts) and install the sensor where the room temperature can be correctly detected
When the outlet air is sucked in at duct type	Cooling operation does not cool the room and heating operation does not heat the room because the short circuited indoor unit is not turned on by the thermostat.	(1) Reconsider the ventilation port construction (2) Replace the indoor unit thermistor with a Remote sensor unit (optional parts) and install the sensor where the room temperature can be correctly detected.
When using the wireless remote controller	Signals may not be received when using it in a room illuminated by an inverter fluorescent lamp.	(1) Turn on the fluorescent lamp and check if the indoor unit receives the signals from the remote controller. If the indoor unit does not receive the signals, consult an authorized service personnel.
When installing the inverter type	It may generate noise in TV sets, stereos and PCs.	(1) The inverter type should be installed at a sufficient distance from these equipments.

SYSTEM DESIGN

8-2. OUTDOOR UNIT INSTALLATION PRECAUTIONS

Note: The information listed below are general precautions.
Some models also include items that do not apply.

■ PLACES WHERE USE PROHIBITED

- Places where there is the danger of combustible gas leakage
- Places where sulfur gas, chlorine gas, acid, alkali, or other matter which effects equipment is generated
- Places not affected by heat radiation from other heat sources
- Places where the air is not stagnant
- Places where machinery which generates high frequencies is used
- Ocean beaches and other areas where there is a lot of salt
- Installation in vehicles, ships, and other conveyances
- Factory, etc. where voltage fluctuations are large

■ POINTS TO REMEMBER WHEN INSTALLING

(1) The set shall be installed at a place which can withstand the weight and vibration of the outdoor unit

(2) To allow maintenance after refrigerant piping, drain piping, and electric wiring connection and installation, provide an installation service space.

*Installation service space is shown on " INSTALLATION PLACE ".

(3) Be careful when installing the set at the following places.

[Installation precautions]

	Contents	Countermeasures (Reference)
When installed near adjacent houses	Perform installation work so that operating sound does not disturb the neighbors.	(1) Install a soundproof barrier (2) Change the installation site
When there is the possibility of strong wind	(1) If the outdoor unit is exposed to strong wind, capacity may drop, frost may form during heating, and operation may be stopped by high pressure rise. In addition, when a very strong wind blows, the fan may be damaged. (2) When a very strong wind blows, there is the possibility of the outdoor unit being toppled over if held only by foundation bolts	(1) Install with the outlet side Keep a sufficient distance away from a facing wall or fence. (2) Make the outlet direction and wind direction perpendicular. (3) Fasten the outdoor unit using toppling prevention hardware (procured at the site).
When snow accumulates	If the outdoor unit is covered by accumulated snow, it may not be able to operate.	(1) Make the foundation as high as possible. (2) Perform snow prevention work.
When installing the inverter type	It may generate noise in TV sets, stereos and PCs.	(1) The inverter type should be installed at a sufficient distance from these equipments.

SYSTEM DESIGN

Refrigerant R410A
INVERTER

AIR CONDITIONER

3 phase type

Single / Simultaneous multi system

6. OPTIONAL PARTS

DTR_SSM001E_03--CHAPTER06
2013.02.22

CONTENTS

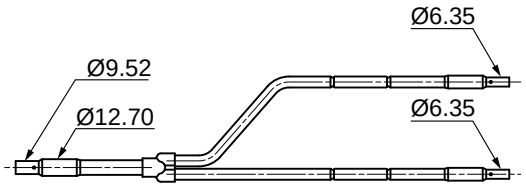
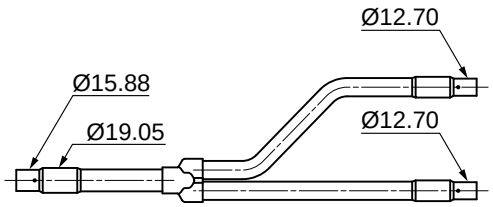
6. OPTIONAL PARTS

1. **BRANCH PIPES** 06-01
2. **CONTROLLER** 06-04
3. **CASSETTE GRILLE** 06-05
4. **OTHERS (optional parts)** 06-06

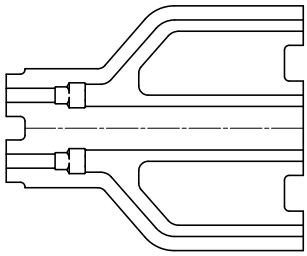
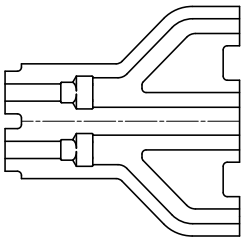
1. BRANCH PIPES

■ MODEL : UTP-SX236□

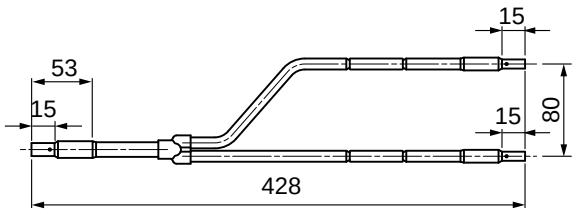
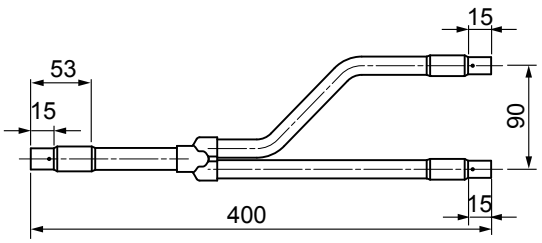
● Port diameters

Liquid pipe	Q'ty	Gas pipe	Q'ty
	1		1

● Heat insulation

Heat insulation for liquid pipe	Q'ty	Heat insulation for gas pipe	Q'ty
	1		1

● Dimensions

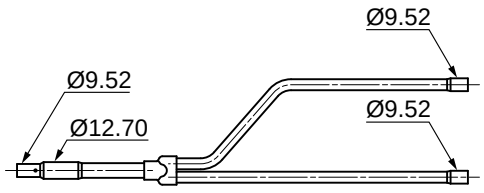
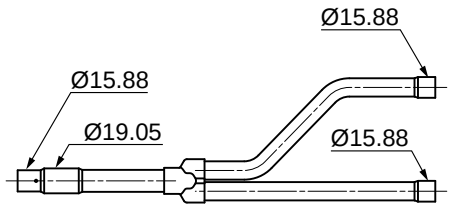
Liquid pipe	Gas pipe
	

OPTIONAL PARTS

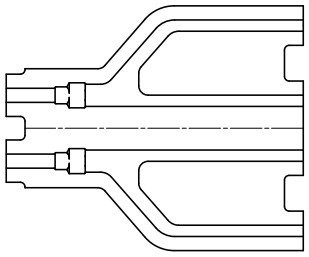
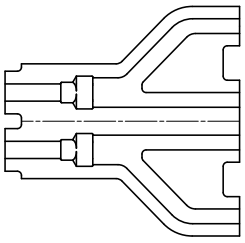
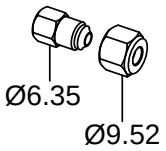
OPTIONAL PARTS

■MODEL : UTP-SX254□

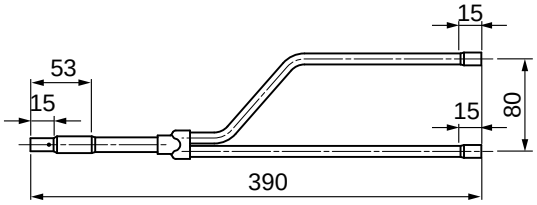
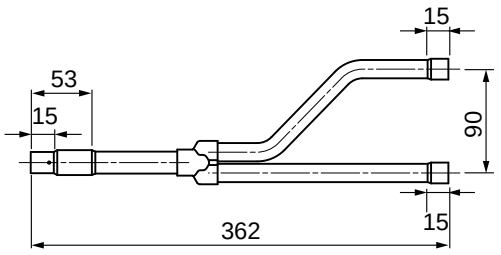
●Port diameters

Liquid pipe	Q'ty	Gas pipe	Q'ty
	1		1

●Heat insulation

Heat insulation for liquid pipe	Q'ty	Heat insulation for gas pipe	Q'ty	Adapter	Q'ty
	1		1		1

●Dimensions

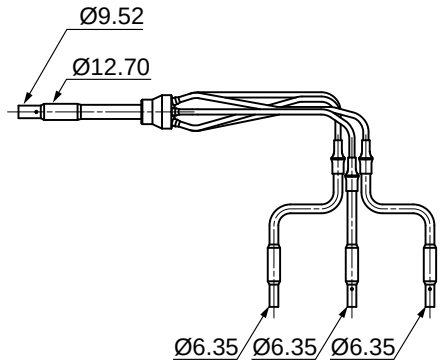
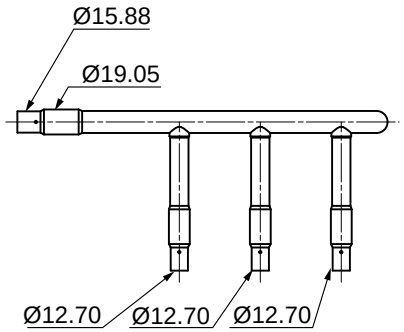
Liquid pipe	Gas pipe
	

OPTIONAL PARTS

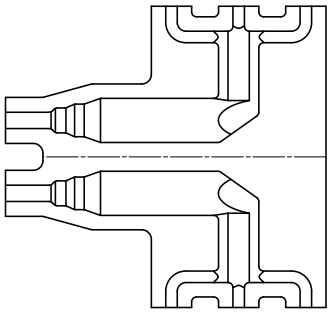
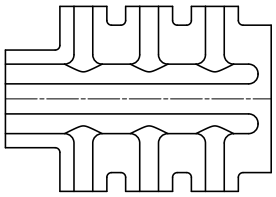
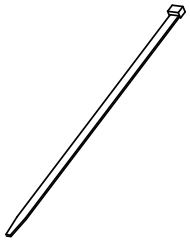
OPTIONAL PARTS

■MODEL : UTP-SX354□

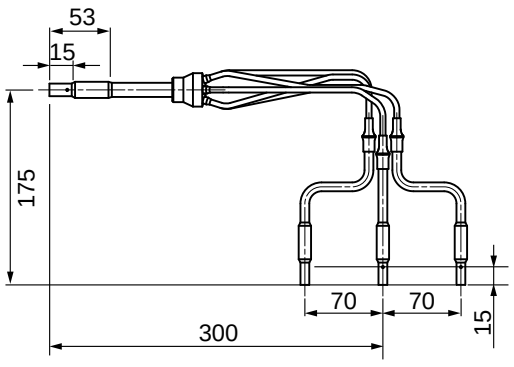
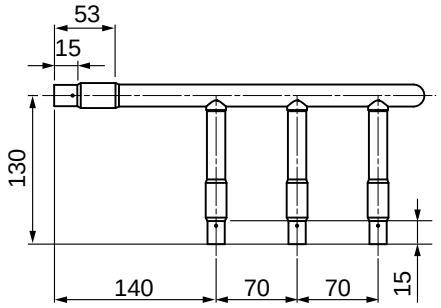
●Port diameters

Liquid pipe	Q'ty	Gas pipe	Q'ty
	1		1

●Heat insulation

Heat insulation for liquid pipe	Q'ty	Heat insulation for gas pipe	Q'ty	Cable tie	Q'ty
	1		1		1

●Dimensions

Liquid pipe	Gas pipe
	

OPTIONAL PARTS

OPTIONAL PARTS

2. CONTROLLER

REMOTE CONTROLLER TYPE		Wired Remote Controller			Wireless Remote Controller	IR Receiver Unit		Simple Remote Controller
Note; ●: Accessory O: Optional Parts —: It is not possible to connect it.		UTY-RVN∗M	UTY-RNN∗M			UTY - LRH∗A2	UTY - LRH∗M	UTY-RSN∗M
INDOOR UNITS	**SINGLE SYSTEM**							
	CASSETTE	O	●	O	—	O	—	O
	DUCT	O	●	O	—	—	O	O
	HIGH STATIC PRESSURE DUCT	O	●	O	—	—	—	O
	CEILING	O	O		●	—	—	O
	SIMULTANEOUS MULTI SYSTEM							
	COMPACT CASSETTE	O	O		●	—	—	O
	SLIM DUCT	O	●	O	—	—	O	O
	DUCT	O	●	O	—	—	O	O
	FLOOR / CEILING	O	O		●	—	—	O

OPTIONAL PARTS

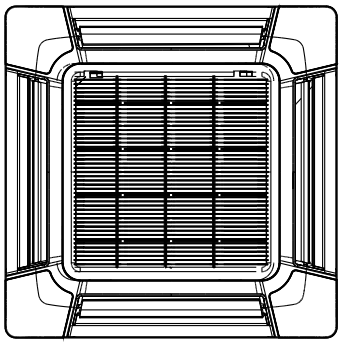
3. CASSETTE GRILLE

■ SINGLE SYSTEM

TYPE	MODEL	INDOOR UNITS			
		CASSETTE	DUCT	HIGH STATIC PRESSURE DUCT	CEILING
Cassette grille	UTG-UG∗A-W	O	—	—	—

● Parts

Cassette grille
Model: UTG-UG∗A-W

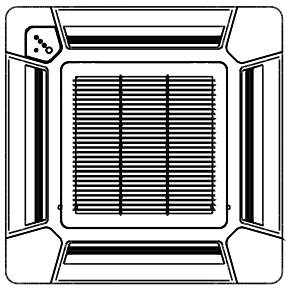


■ SIMULTANEOUS MULTI SYSTEM

TYPE	MODEL	INDOOR UNITS			
		COMPACT CASSETTE	SLIM DUCT	DUCT	FLOOR / CEILING
Cassette grille	UTG-UF∗D-W	O	—	—	—

● Parts

Cassette grille
Model: UTG-UF∗D-W



OPTIONAL PARTS

4. OTHERS (optional parts)

■ SINGLE SYSTEM

TYPE	MODEL	INDOOR UNITS				OUTDOOR UNIT
		CASSETTE	DUCT	HIGH STATIC PRESSURE DUCT	CEILING	
Air outlet shutter plate	UTR-YDZC	O	—	—	—	—
Wide panel	UTG-AGYA-W	O	—	—	—	—
Panel spacer	UTG-BGYA-W	O	—	—	—	—
Insulation kit for high humidity	UTZ-KXGA	O	—	—	—	—
Fresh air intake kit	UTZ-VXGA	O	—	—	—	—
Remote sensor unit	UTY-XSZX	—	O	O	—	—
External control set	UTD-ECS5A	O	O	O	O	—
Long-life filter	UTD-LF60KA	—	—	O	—	—
	UTD-LF25NA	—	O	—	—	—
Square flange	UTD-SF045T	—	O	—	—	—
Round flange	UTD-RF204	—	O	—	O	—
Drain pump unit	UTZ-PX1NBA	—	O	—	—	—
	UTR-DPB24T	—	—	—	O	—
External connect kit	UTY-XWZX	O	—	—	O	—
	UTY-XWZXZ2	—	—	—	—	O

O: Optional, —: It is not possible to connect it.

■ SIMULTANEOUS MULTI SYSTEM

TYPE	MODEL	INDOOR UNITS				OUTDOOR UNIT
		COMPACT CASSETTE	SLIM DUCT	DUCT	FLOOR / CEILING	
Air outlet shutter plate	UTR-YDZB	O	—	—	—	—
Insulation kit for high humidity	UTZ-KXGC	O	—	—	—	—
Fresh air intake kit	UTZ-VXAA	O	—	—	—	—
Square flange	UTD-SF045T	—	—	O	—	—
Round flange	UTD-RF204	—	—	O	—	—
Long-life filter	UTD-LF25NA	—	—	O	—	—
Remote sensor unit	UTY-XSZX	—	O	O	—	—
Auto louver grille kit	UTD-GXSB-W	—	O	—	—	—
External control set	UTD-ECS5A	—	O	O	—	—
Drain pump unit	UTZ-PX1NBA	—	—	O	—	—
External connect kit	UTY-XWZX	O	—	—	O	—
	UTY-XWZXZ2	—	—	—	—	O

O: Optional, —: It is not possible to connect it.

OPTIONAL PARTS

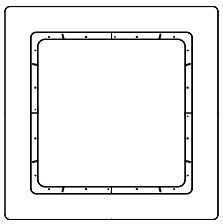
■ SINGLE SYSTEM

● Parts

Air outlet shutter plate
Model:UTR-YDZC

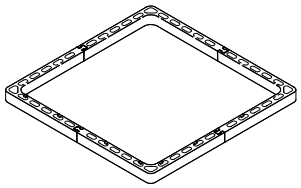
For
CASSETTE TYPE

Wide panel
Model:UTG-AGYA-W



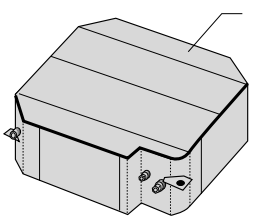
For
CASSETTE TYPE

Panel spacer
Model:UTG-BGYA-W



For
CASSETTE TYPE

Insulation kit for high humidity
Model:UTZ-KXGA



For
CASSETTE TYPE

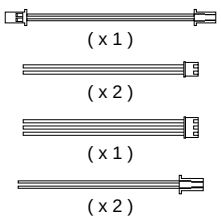
Fresh air intake kit
Model:UTZ-VXGA

For
CASSETTE TYPE

Remote sensor
Model:UTY-XSZX

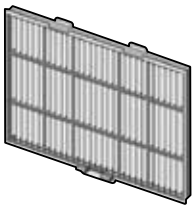
For
HIGH STATIC
PRESSURE DUCT TYPE,
DUCT TYPE

External control set
Model:UTD-ECS5A



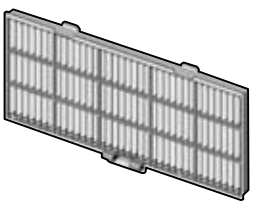
For
CASSETTE TYPE,
HIGH STATIC
PRESSURE DUCT TYPE,
DUCT TYPE,
CEILING TYPE

Long-life filter
Model:UTD-LF60KA



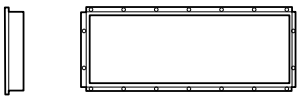
For
HIGH STATIC PRESSURE
DUCT TYPE

Long-life filter
Model:UTD-LF25NA



For
DUCT TYPE

Square flange
Model:UTD-SF045T



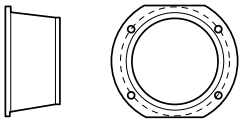
For
DUCT TYPE

OPTIONAL PARTS

OPTIONAL PARTS

Round flange

Model:UTD-RF204



For
DUCT TYPE,
CEILING TYPE

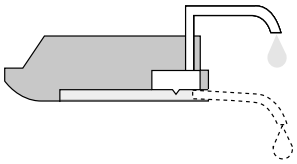
Drain pump unit

Model:UTZ - PX1NBA

For
DUCT TYPE

Drain pump unit

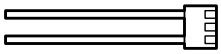
Model:UTR-DPB24T



For
CEILING TYPE

External connect kit

Model:UTY - XWZX



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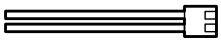


(x 1)

For
CASSETTE TYPE,
CEILING TYPE

External connect kit

Model:UTY - XWZXZ2

INPUT / OUTPUT

For
OUTDOOR UNIT

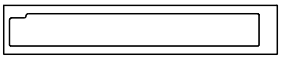
OPTIONAL PARTS

OPTIONAL PARTS

■ SIMULTANEOUS MULTI SYSTEM

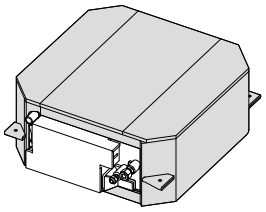
● Parts

Air outlet shutter plate
Model:UTR-YDZB



For
COMPACT CASSETTE
TYPE

Insulation kit for high humidity
Model:UTZ-KXGC

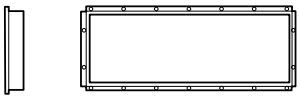


For
COMPACT CASSETTE
TYPE

Fresh air intake kit
Model:UTZ-VXAA

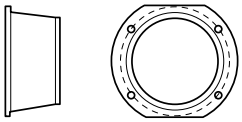
For
COMPACT CASSETTE
TYPE

Square flange
Model:UTD-SF045T



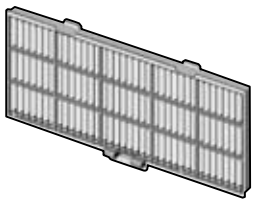
For
DUCT TYPE

Round flange
Model:UTD-RF204



For
DUCT TYPE

Long-life filter
Model:UTD-LF25NA



For
DUCT TYPE

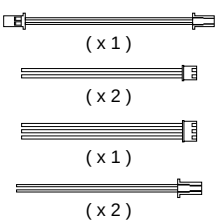
Remote sensor
Model:UTY-XSZX

For
DUCT TYPE,
SLIM DUCT TYPE

Auto louver grille kit
Model:UTD-GXSB-W

For
SLIM DUCT TYPE

External control set
Model:UTD-ECS5A



For
DUCT TYPE,
SLIM DUCT TYPE

Drain Pump Unit
Model:UTZ - PX1NBA

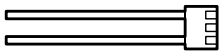
For
DUCT TYPE

OPTIONAL PARTS

OPTIONAL PARTS

External connect kit

Model:UTY - XWZX



(x 1)

(x 1)

For
COMPACT CASSETTE
TYPE,
FLOOR / CEILING TYPE

External connect kit

Model:UTY - XWZXZ2

INPUT / OUTPUT

For
OUTDOOR UNIT

OPTIONAL
PARTS